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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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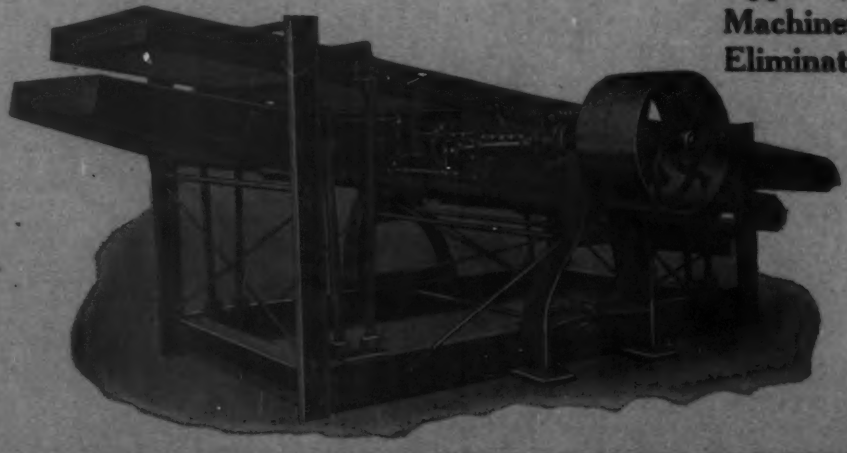

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD
FIFTY-SECOND YEAR
Published Every Thursday by the
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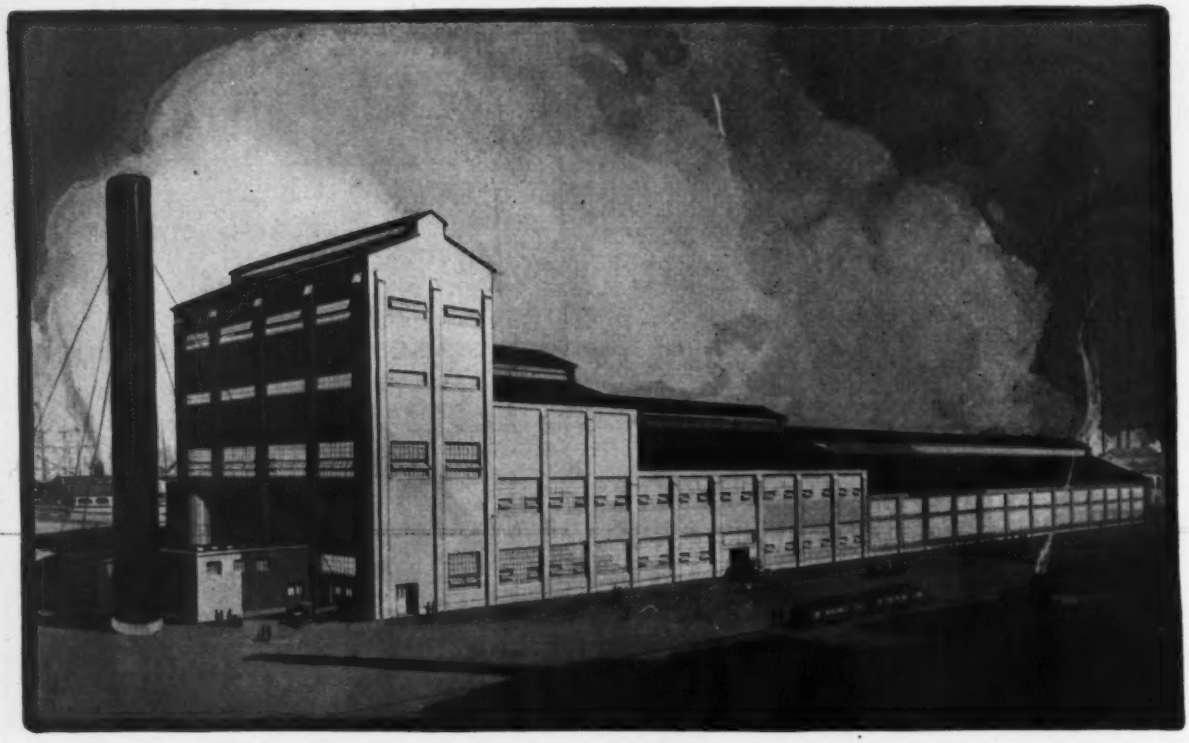
TABLE OF CONTENTS

	PAGE
Joint Committee Opens Paper Bids	23
Canadian Pulp and Paper Men Meet	31
Exportation of Pulp Wood	32
British Empire Exhibition	32
News Print Service Bureau Meets	34
S. P. Richards Co. 75 Years Old	34
Chicago Trade Looks for Early Activity	36
La Salle Paper Co. Builds New Structure	36
Sefton Co. Maintains Excellent Display	36
Superintendents' Convention Dates Set	36
Western Paper Stock Has Disastrous Fire	36
Moser Takes on Two New Salesmen	36
E. E. Eiffert to Stay in California	36
New York Paper Salesmen to Meet	36
Fair Demand for Paper in Toronto Market	38
Paper Box Men Get Together	38
Pulpwood Commission Hearings Continue	38
Canada's Mills Let Wood Go By Doors	38
High Honor for Mr. Carruthers	38
Philadelphia Fine Paper Situation Improved	40
Paper House Has Film Show	40
Thomas W. Price Continues Dill & Collins Lines	40
New York Trade Jottings	42
OBITUARY	44
Watertown Men on Pulpwood Embargo	44
Paper Production Increases in Russia	44
EDITORIAL	46
Great Activity in Laurentide Stock	47
Bids and Awards for Government Paper	47
Skowhegan Paper Co. to Resume	47
TECHNICAL SECTION	49
COST SECTION	59
Mead Pulp & Paper Co. Improvements	64
Continental Paper to Reorganize	64
Connecticut Valley Cost Men Meet	64
Steam Costs	64
Imports of Paper and Paper Stock	68
Exports of Paper and Paper Stock	68
MARKET REVIEW:	
New York Market Review	66
Market Quotations	67
Miscellaneous Markets	70

Want and For Sale Advertisements, Pages 74, 75 and 76



The Austin Company has designed a new mill for the Columbia River Paper Company, Vancouver, Wash. The project, shown above, is now under construction by Austin. It will be the first parchment paper mill built on the Pacific Coast.

BUILDERS FOR THE PAPER INDUSTRY

AUSTIN has built for representative paper manufacturers from coast to coast. The prestige Austin has gained among these manufacturers is a real tribute to the continued effort Austin has made to serve, and serve well. Half a century of building experience has fitted Austin extremely well to be Builders for The Paper Industry.

At present Austin is building at Vancouver, Washington for the Columbia River Paper Mills. This plant was designed by Austin and is the first parchment paper plant to be built on the Pacific Coast. Below is a partial list of Austin Clients in The Paper Industry.

Austin builds from designs furnished by the owners, or Austin will co-operate with the owners' engineers in the development of the plans and build from them. Either way, Austin guarantees you the total cost of the finished project, guarantees the date of delivery and guarantees the quality and workmanship of the finished structures.

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A Partial List of Austin Clients in the Paper Industry

Flintkote Company	Little Ferry, N. J.	National Fibre and Ins. Co	Yorklyn, Del.
Heppes-Nelson Roofing Co	Melrose Park, Ill.	Peninsular Paper Co	Ypsilanti, Mich.
Log Supply Co	Berthierville, Ont.	Richardson Co.	Cincinnati, Ohio
H. F. Watson Co	Chicago, Ill.	Simplex Paper Corp	Palmyra, Mich.
A. P. W. Paper Co	Albany, N. Y.	West Carrollton Parchment Co	Dayton, Ohio
Arrowhead Mills	Fulton, N. Y.	Oswegatchie Paper Co	Gouverneur, N. Y.
Bogota Paper and Board Co	Bogota, N. J.	Ideal Corrugated Box Co	Parkersburg, W. Va.
Continental Fibre Co	Newark, Del.	Algonquin Paper Co	Ogdensburg, N. Y.
Chillicothe Paper Co	Chillicothe, Ohio	Standard Wall Paper Co	Joliet, Ill.
Hinde & Dauch Co	Sandusky, Ohio	Jaite Company	Jaite, Ohio
Hammermill Paper Co	Erie, Pa.	Holyoke Gummed Paper Corp	Holyoke, Mass.

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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXVIII No. 5 NEW YORK AND CHICAGO Thursday, January 31, 1924

ANNUAL BIDS OPENED FOR GOVERNMENT PAPER

Joint Congressional Printing Committee Announces Bids on Supplies for the Year Beginning March 1, 1924—More Interest Is Shown in the Bidding Than in Some Years Past—Senator Moses of New Hampshire, Chairman, Presides at the Opening—Awards Are to Be Made Monday of Next Week—Detailed Account of the Bidding

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 28, 1924.—More interest than in some years past was shown today in the opening of the bids by the Joint Committee in Printing for supplying the paper for the year beginning March 1, 1924 or six months thereof. This was evidenced by the fact that thirty-eight bids were opened that there were more bids for supplying both the 6 months and the 12 months periods, that there were a number of new bidders, and that more representatives of the trade were present at the opening, at which Senator Moses presided. Among the firms represented were the Whitaker Paper Company, R. P. Andrews Paper Company, Old Dominion Paper Company, Mathers-Lamm Company, The Aetna Paper Company, American Writing Paper Company, Barton, Duer and Koch, Champion Fiber Paper Coated Company and others.

The Committee will meet on Monday, February 4, for the purpose of considering the bids and making the awards. The bids received were as follows:

Standard News Print

No. 1—40,000 lbs., 24x36—32; rolls, 19 ins. wide (3-inch cores).
Dobler & Mudge, Baltimore, Md., 6 months, 4.49c.; 12 months, 4.39c.
Beaver Pulp and Paper Company, Inc., New York City, 6 months, 3.95c.; 12 months, 3.95c.
The Wright Company, Inc., New York City, 6 months, 4.11c.
International Paper Company, New York City, 4.06c. for 4 months' supply only.
Reese & Reese, Baltimore, Md., 1 year, 3.995c.
Import Paper Company, Chicago, 6 months, 3.85c.; 12 months, 3.85c.
Whiting-Patterson Company, Inc., Philadelphia, Pa., 1 year, 4.03c.
The Whitaker Paper Company, Baltimore, Md., 4.025c. for 6 months.

No. 2—3,000,000 lbs., 24x36—32; rolls, 48 ins. wide (3-inch cores).
Dobler & Mudge, 6 months, 4.39c.; 1 year, 4.39c.
Beaver Pulp and Paper Company, Inc., 6 months, 3.9255c.; 1 year, 3.9255c.
The Wright Company, Inc., 6 months, 4.11c.
International Paper Company, 4.06c. for 4 months' supply only.
Reese & Reese, 1 year, 3.995c.
Import Paper Company, 6 months, 3.85c.; 1 year, 3.85c.
Whiting-Patterson Company, 1 year, 4.03c.
The Whitaker Paper Company, 6 months, 4.025c.

Machine-Finish Book

No. 3—250,000 lbs., 25x38—35; cut 24x32 ins. flat.
Allied Paper Mills, Kalamazoo, Mich., 6 months, 6.905c.
International Paper Company, 1 year, 7.415c.
Reese & Reese, 6 months, 6.855c.
The Barton, Duer & Koch Paper Company, Baltimore, Md., 6 months, 6.43c.; 1 year, 6.43c.
Old Dominion Paper Company, Norfolk, Va., 6 months, 7.917c.
The Champion Fiber Company, Cincinnati, Ohio, 6 months, 6.78c.; 1 year, 6.78c.

No. 4—1,000,000 lbs., 25x38—35; cut 24x38 and 38x48 ins. flat.
Allied Paper Mills, 6 months, 6.905c.
Reese & Reese, 6 months, 6.855c.
The Barton, Duer & Koch Paper Company, 6 months, 6.43c.; 1 year, 6.43c.
The Champion Fiber Company, 6 months, 6.78c.; 1 year, 6.78c.

No. 5—1,000,000 lbs., 25x38—35; cut 24x38 and 38x48 ins. flat.
Allied Paper Mills, 6 months, 6.905c.
Reese & Reese, 6 months, 6.855c.
The Barton, Duer & Koch Paper Company, 6 months, 6.43c.; 1 year, 6.43c.
The Champion Fiber Company, 6 months, 6.78c.; 1 year, 6.78c.

No. 6—2,000,000 lbs., 25x38—35; rolls, 18, 19, 21, and 23 ins. wide (3-inch cores).
Bryant Paper Company, Kalamazoo, Mich., 1 year, 6.89c.
Reese & Reese, 6 months, 6.299c.
Sidney L. Willson, receiver of American Writing Paper Company, Holyoke, Mass., 6 months, 5.97c.; 1 year, 5.97c.
The Champion Fiber Company, 6 months, 6.38c.; 1 year, 6.48c.

No. 7—1,200,000 lbs., 25x38—35; rolls, 38 ins. wide (3-inch cores).
Allied Paper Mills, 6 months, 6.405c.
Bryant Paper Company, 1 year, 6.89c.
*Sidney L. Willson, 6 months, 5.97c.; 1 year, 5.97c.
Barton, Duer & Koch Paper Company, 6 months, 5.89c.; 1 year, 5.89c.
The Champion Fiber Company, 6 months, 6.38c.; 1 year, 6.43c.

No. 8—1,200,000 lbs., 25x38—35; rolls, 38 ins wide (3-inch cores).
Bryant Paper Company, 1 year, 6.89c.
*S. L. Willson, 6 months, 5.97c.; 1 year, 5.97c.
Barton, Duer & Koch Paper Company, 6 months, 5.89c.; 1 year, 5.89c.
Old Dominion Paper Company, 6 months, 7.017c.
The Champion Fiber Company, 6 months, 6.38c.; 1 year, 6.43c.
Allied Paper Company, 6 months, 6.405c.

No. 9—700,000 lbs., 25x38—35; rolls, 48 ins. wide (3-inch cores).
Allied Paper Mills, 6 months, 6.405c.
*S. L. Willson, 6 months, 5.97c.; 1 year, 5.97c.
Barton, Duer & Koch Paper Company, 6 months, 5.89c.; 1 year, 5.89c.
Old Dominion Paper Company, 6 months, 7.017c.
The Champion Fiber Company, 6 months, 6.40c.; 1 year, 6.45c.

No. 10—400,000 lbs., 25x38—40; rolls, 36¾ ins. wide (3-inch cores).
Kalamazoo Paper Company, Kalamazoo, Mich., 6 months, 6.12c.
Allied Paper Mills, 6 months, 6.18c.
Bryant Paper Company, 1 year, 6.60c.
Milton Hopfenmaier, Washington, D. C., 6 months, 5.97c.
*S. L. Willson, 6 months, 5.83c.; 1 year, 5.83c.
P. H. Glatfelter Company, Springgrove, Pa., 6 months, 5.74c.; 1 year, 5.74c.
Old Dominion Paper Company, 6.999c. for 6 months.
Champion Fiber Company, 6 months, 6.40c.; 1 year, 6.45c.

No. 11—200,000 lbs., 25x38—40; rolls, 38 ins. wide.
Kalamazoo Paper Company, 6 months, 6.12c.
Allied Paper Mills, 6 months, 6.18c.
Bryant Paper Company, 1 year, 6.60c.
Milton Hopfenmaier, 6 months, 5.97c.
*S. L. Willson, 6 months, 5.83c.; 1 year, 5.83c.
P. H. Glatfelter Company, 6 months, 5.74c.; 1 year, 5.74c.
Old Dominion Paper Company, 6.717c. for 6 months.
The Champion Fiber Company, 6 months, 6.37c.; 1 year, 6.43c.

No. 12—600,000 lbs., 25x38—40; cut 24x38 and 38x48 ins. flat.
Kalamazoo Paper Company, 6 months, 6.52c.
Allied Paper Mills, 6 months, 6.68c.
Reese & Reese, 6 months, 6.5664c.
Milton Hopfenmaier, 6 months, 6.57c.
R. F. Andrews Paper Company, Washington, D. C., 1 year, 6.39c.
P. H. Glatfelter Company, 6 months, 5.99c.; 1 year, 5.99c.
The Champion Fiber Company, 6 months, 6.62c.; 1 year, 6.62c.

No. 13—80,000 lbs., 25x38—50; rolls, 33¾ ins. wide (3-inch cores).
Kalamazoo Paper Company, 6 months, 6.12c.
Allied Paper Mills, 6 months, 5.905c.
International Paper Company, 1 year, 6.515c.
Milton Hopfenmaier, 6 months, 6.37c.
*S. L. Willson, 6 months, 5.79c.; 1 year, 5.79c.
P. H. Glatfelter Company, 6 months, 5.74c.; 1 year, 5.74c.
Old Dominion Paper Company, 6 months, 6.999c.
The Champion Fiber Company, 6 months, 6.38c.; 1 year, 6.44c.

No. 14—350,000 lbs., 25x38—50; cut 24x38, 32x42, 38x48, and 41x52 ins. flat.

Kalamazoo Paper Company, 6 months, 6.52c.
Allied Paper Mills, 6 months, 6.405c.
Milton Hopfenmaier, 6 months, 6.22c.
R. P. Andrews Paper Company, 6.34c. for 1 year.
P. H. Glatfelter Company, 6 months, 5.99c.; 1 year, 5.99c.
The Champion Fiber Company, 6 months, 6.62c.; 1 year, 6.67c.
Reese & Reese, 6 months, 6.2875c.

No. 15—350,000 lbs., 25x38—60 and 70; cut 29x41 and 38x48 ins. flat (the grain of sheet to run as ordered).

Kalamazoo Paper Company, 6 months, 6.52c.
Allied Paper Mills, 6 months, 6.225c.
Milton Hopfenmaier, 6 months, 6.22c.
R. P. Andrews Paper Company, 1 year, 6.34c.
P. H. Glatfelter Company, 6 months, 5.99c.; 1 year, 5.99c.
The Champion Fiber Company, 6 months, 6.62c.; 1 year, 6.67c.

No. 16—20,000 lbs., salmon, 25x38—50; flat, min. order, 5,000 lbs.

Reese & Reese, 6 months, 6.843c.
NOTE—The following reductions are to be made on the foregoing bids:
Kalamazoo Paper Company, 20c. in soft fold bundles.
Reese & Reese, 25c. on soft fold bundles.
Milton Hopfenmaier, 10c. on skeleton frames and 25c. on soft fold bundles.
R. P. Andrews Paper Company, 25c. on soft fold bundles.
P. H. Glatfelter Company, 24c. on soft fold bundles.
Barton, Duer & Koch Paper Company, 24c. on soft fold bundles.
Old Dominion Paper Company, 25.49c. on soft fold bundles.
The Champion Fiber Company, 10c. on soft fold bundles.

Plant-Fiber Machine-Finish Book

No. 17—500,000 lbs., 25x38—40; rolls, 19, 38, and 48 ins. wide.

No bids.

No. 18—500,000 lbs., 25x38—40; rolls, 19, 38, and 48 ins. wide.

No bids.

Antique Book

No. 19—50,000 lbs., 25x38—50; cut 25x38, 29x41, and 38x50 ins. flat.

Kalamazoo Paper Company, 6 months, 6.52c.
Allied Paper Mills, 6 months, 6.405c.
Reese & Reese, 6 months, 6.843c.
Whiting-Patterson Company, Inc., 6 months, 7.1c.
P. H. Glatfelter Company, 6 months, 6.23c.; 1 year, 6.23c.
Old Dominion Paper Company, 6 months, 8.499c.
The Whitaker Paper Company, 6 months, 6.89c.
The Champion Fiber Company, 6 months, 7.46c.; 1 year, 7.48c.

No. 20—1,000,000 lbs., suitable for mimeographing, 25x38—50; cut 21½x32½, and 25½x32½ ins.

Kalamazoo Paper Company, 6 months, 6.52c.
Allied Paper Mills, 6 months, 6.405c.
International Paper Company, 1 year, 7.015c.
Reese & Reese, 6 months, 6.6475c.
Whiting-Patterson Company, Inc., 6 months, 6.88c.
R. P. Andrews Paper Company, 1 year, 6.29c.
*S. L. Willson, 6 months, 6.77c.; 1 year, 6.77c.
P. H. Glatfelter Company, 6 months, 6.23c.; 1 year, 6.23c.
Old Dominion Paper Company, 6 months, 8.171c.
Whitaker Paper Company, 6 months, 6.73c.
The Champion Fiber Company, 6 months, 7.36c.; 1 year, 7.48c.

Opaque Machine-Finish Book

No. 21—200,000 lbs., 25x38—30; cut 32x48 and 38x48 ins. flat.

Bryant Paper Company, 1 year, 8.77c.
Allied Paper Mills, 6 months, 8.255c.
Old Dominion Paper Company, 6 months, 11.74c.
The Champion Fiber Company, 6 months, 7.47c.; 1 year, 7.57c.

Rag Opaque Machine-Finish Book

No. 22—150,000 lbs., 25x38—30; cut 32x48 and 38x48 ins. flat.

Bryant Paper Company, 1 year, 10.57c.
Perkins-Goodwin Company, New York City, 6 months, 14.5c.
The Whitaker Paper Company, 6 months, 14.97c.

Rag Machine-Finish Book

No. 23—100,000 lbs., 25x38—40; cut 32x48 ins. flat.

Bryant Paper Company, 1 year, 9.37c.
Perkins-Goodwin Company, 6 months, 10.9c. Reduction on soft-fold of 25c.
*S. L. Willson, 6 months, 10.43c.; 1 year, 10.43c.
Old Dominion Paper Company, 6 months, 11.999c.
The Whitaker Paper Company, 11.97c. for 6 months.

No. 24—350,000 lbs., 25x38—40; cut 38x48 ins. flat.

Bryant Paper Company, 1 year, 9.37c.
Perkins-Goodwin Company, 6 months, 10.9c. Reduction of 25c. in soft bundles.
*S. L. Willson, 6 months, 10.43c.; 1 year, 10.43c.
Old Dominion Paper Company, 6 months, 11.999c.
Whitaker Paper Company, 6 months, 11.97c.

No. 25—100,000 lbs., 25x38—40 and 45; cut any size, flat, min. width 24 ins., max. width 42 ins.

Bryant Paper Company, 1 year, 9.37c.
Perkins-Goodwin Company, 10.7c. Reduction of 25c. in soft bundles.
*S. L. Willson, 6 months, 10.43c.; 1 year, 10.43c.
Old Dominion Paper Company, 11.999c. for 6 months.
The Whitaker Paper Company, 6 months, 11.97c.

No. 26—1,000,000 lbs., suitable for duplicating and sufficiently sized for writing on with ink, 25x38—50; cut 21½x32½ and 25½x32½ ins. flat.

Bryant Paper Company, 1 year, 9.22c.
Perkins-Goodwin Company, 6 months, 11.2c. Reduction of 25c. in soft bundles.
R. P. Andrews Paper Company, 6 months, 10.44c. Reduction in soft bundles 50c. 1 year, 10.44c. Reduction as above.
*S. L. Willson, 6 months, 10.33c.; 1 year, 10.33c. Reduction in soft fold bundles of 25c.
Whitaker-Paper Company, 6 months, 10.97c. Reduction of 20c. per 100 pounds in skeleton frames.

Supercalendered Book

No. 27—70,000 lbs., 25x38—45; cut 24x32 and 32x48 ins. flat.

Kalamazoo Paper Company, 6 months, 6.87c.
*S. L. Willson, 6 months, 8.9c.; 1 year, 8.9c.

No. 28—500,000 lbs., 25x38—45; cut 31¼x45½ ins. flat.

Kalamazoo Paper Company, 6 months, 6.87c. Reduction of 20c. per 100 pounds in soft fold bundles.
R. P. Andrews Paper Company, 1 year, 6.58c. If in flat bundles reduction of 25c.
*S. L. Willson, 6 months, 7.84.; 1 year, 7.84c.
Barton, Duer & Koch Paper Company, 6 months, 6.62c.; 1 year, 6.62c. Reduction of 25c. if in soft fold bundles.

No. 29—600,000 lbs., 25x38—45; cut 24x38 and 38x48 ins. flat.

Kalamazoo Paper Company, 6 months, 6.87c.
R. P. Andrews Paper Company, 1 year, 6.58c. Reduction of 25c. if in flat bundles.
*S. L. Willson, 6 months, 7.84c.; 1 year, 7.84c.
Barton, Duer & Koch, 6 months, 6.62c; 1 year, 6.62c. Reduction of 25c. if in soft fold bundles.

No. 30—900,000 lbs., 25x38—45; rolls, 38 ins. wide (3-inch cores).

Kalamazoo Paper Company, 6 months, 6.57c.
Bryant Paper Company, 1 year, 7.37c.
R. P. Andrews Company, 1 year, 6.08c. Reduction if in flat bundles of 25c.
*S. L. Willson, 6 months, 7.14c.; 1 year, 7.14c.
The Champion Fiber Company, 6 months, 6.98c.; 1 year, 6.98c.

No. 31—900,000 lbs., 25x38—45; rolls, 38 ins. wide (3-inch cores).

Kalamazoo Paper Company, 6 months, 6.57c.
Bryant Paper Company, 1 year, 7.37c.
Champion Fiber Company, 6 months, 6.98c.; 1 year, 6.98c..
R. P. Andrews Paper Company, 1 year, 6.08c. Reduction in flat bundles of 25c.
*S. L. Willson, 6 months, 7.14c.; 1 year, 7.14c.

No. 32—20,000 lbs., 25x38—45 and 50; cut any size; flat, min. width 24 ins., max. width 42 ins.

Kalamazoo Paper Company, 6 months, 6.87c. Reduction in soft fold bundles of 20c. per 100 pounds.
*S. L. Willson, 6 months, 9.46c.; 1 year, 9.46c. Reduction of 25c. in soft fold bundles.

Rag Supercalendered Book

No. 33—10,000 lbs., 25x38—40 and 45; cut any size; flat, min. width 24 ins., max. width 42 ins.

Perkins-Goodwin Company, 6 months, 11.7c. Reduction in soft fold bundles of 25c. per 100 pounds.
*S. L. Willson, 6 months, 13.29c.; 1 year, 13.29c. Reductions in soft bundles of 25c. per 100 pounds.
The Whitaker Paper Company, 6 months, 12.97c. Reduction of 20c. per 100 pounds in skeleton frames.

Halftone Book

No. 34—125,000 lbs., 25x38—70; cut 24x38 and 38x48 ins. flat.

Kalamazoo Paper Company, 6 months, 6.87c.
R. P. Andrews Paper Company, 1 year, 6.53c.
*S. L. Willson, 6 months, 7.31c.; 1 year, 7.31c.
Old Dominion Paper Company, 8.74c. for 6 months.

Single Coated Book, Two Sides

No. 35—250,000 lbs., 25x38—70; cut any size; flat, min. width 24 ins., max. width 42 ins.

Kalamazoo Paper Company, 6 months, 8.65c.
Allied Paper Mills, 6 months, 9.405c.
The Broderick Paper Company, Baltimore, Md., 6 months, 8.21c.
The Whitaker Paper Company, 6 months, 8.59c.; 1 year, 8.59c.
Bryant Paper Company, 1 year, 8.97c.

Double Coated Book, Two Sides

No. 36—200,000 lbs., 25x38—70 and 80; cut any size; flat, min. width 24 ins., max. width 42 ins.

Kalamazoo Paper Company, 6 months, 8.90c.
Allied Paper Mills, 6 months, 9.645c.
The Broderick Paper Company, 6 months, 9.05c.
Bryant Paper Company, 1 year, 9.47c.

Rag Double Coated Book, Two Sides

No. 37—30,000 lbs., 25x38—70 and 80; cut any size, flat, min. width 24 ins., max. width 42 ins.

Allied Paper Mills, 1 year, 13.0c.
The Broderick Paper Company, 6 months, 11.95c.

White French Folio Writing

No. 38—1,500 lbs., No. 10, cut 17x22 ins., flat, min. order, 1,500 lbs.

Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., 6 months, 11.5c. Slight variation in shade as compared with standard sample.
Dobler & Mudge, 6 months, 14.0c.; 1 year, 14.0c.
Reese & Reese, 6 months, 12.78c.
Import Paper Company, 13.5c. for 6 months; 1 year, 13.5c. Less 2 per cent for 30 days.
The Barton, Duer & Koch Paper Company, 6 months, 11.35c.; 1 year, 11.35c.
Old Dominion Paper Company, 6 months, 14c.; 1 year, 14c.
The Whitaker Paper Company, 6 months, 11.72c.

U S M O Safety Writing, Blue, Safety or Sensitive Design

No. 39—500,000 lbs., No. 16, rolls, 11 and 22 ins. wide (3-inch cores).

George La Monte & Son, New York City, 6 months, 18.5c.; 1 year, 18.5c.
Reese & Reese, 1 year, 17c.
The Perfect Safety Paper Company, Holyoke, Mass., 1 year, 15.35c.
Whiting-Patterson Company, Inc., 1 year, 17.45c.
R. P. Andrews Paper Company, 1 year, 14.82c.

U S M O Writing, White and Blue

No. 40—8,000 lbs., machine-dried, No. 16; rolls, 8½ ins. wide (3-inch cores); min. order, either color, 4,000 lbs.

The Perfect Safety Paper Company, 1 year, 12.50c.
Whiting-Patterson Company, 1 year, 10.75c.
R. P. Andrews Paper Company, 1 year, 10.0 blue; 9.0 white.
Old Dominion Paper Company, 6 months, 10.33c. white; 11.33c. blue; 1 year, 10.33c. white; 11.33c. blue.

Safety Writing, Colored

No. 41—4,000 lbs., blue, gray, green, pink, salmon, and yellow, No. 20; cut 17x28, 21x32, and 22x34 ins. flat.

George La Monte & Son, 6 months, 22.4c.; 1 year, 22.4c.
Reese & Reese, 1 year, 20c.
The Perfect Safety Paper Company, 1 year, 21.0c. (on sample).

Sulphite Writing, White and Colored

No. 42—25,000 lbs., No. 13; cut 21x32 and 23x32 ins., flat, min. order, 5,000 lbs.

International Paper Company, 1 year, 8.69c.
Reese & Reese, 6 months, 7.977c.
Whiting-Patterson Company, Inc., 1 year, 10.13c.
The Aetna Paper Company, Dayton, Ohio, 6 months, 8.48c, 1 year, 8.48c.
R. P. Andrews Paper Company, 1 year, 7.12c.
*S. L. Willson, 6 months, 9.20c.; 1 year, 9.20c.
Old Dominion Paper Company, 6 months, 8.97c.
The Champion Fiber Company, 6 months, 7.65c.; 1 year, 7.75c.

No. 43—350,000 lbs.; No. 16, cut 21½x32½ and 26x34½ ins. flat.

International Paper Company, 1 year, 7.94c.
Reese & Reese, 6 months, 7.482c.
Whiting-Patterson Company, Inc., 1 year, 8.23c.
The Aetna Paper Company, 6 months, 7.98c.; 1 year, 7.98c.
R. P. Andrews Paper Company, 1 year, 6.62c.
*S. L. Willson, 6 months, 7.54c.; 1 year, 7.54c.
Old Dominion Paper Company, 6 months, 7.984c.; 1 year, 7.984c.
The Champion Fiber Company, 6 months, 6.99c.; 1 year, 7.08c.

No. 44—650,000 lbs., No. 20; cut 17x28 and 21x32 ins. flat

International Paper Company, 1 year, 7.94c.
Reese & Reese, 6 months, 7.482c.
Whiting-Patterson Company, Inc., 1 year, 8.23c.
The Aetna Paper Company, 6 months, 7.98c.; 1 year, 7.98c.
R. P. Andrews Paper Company, 1 year, 6.62c.
*S. L. Willson, 6 months, 7.54c.; 1 year, 7.54c.
Old Dominion Paper Company, 6 months, 7.497c.; 1 year, 7.497c.
The Champion Fiber Company, 6 months, 6.99c.; 1 year, 7.08c.

No. 45—100,000 lbs., No. 13; rolls, min. width 16 ins., max. width 24 ins. (3-inch cores).

International Paper Company, 1 year, 8.19c.
Reese & Reese, 6 months, 7.734c.
Whiting-Patterson Company, Inc., 1 year, 9.64c.
The Aetna Paper Company, 6 months, 7.98c.; 1 year, 7.98c.
R. P. Andrews Paper Company, 1 year, 6.82c.
*S. L. Willson, 6 months, 8.04c.; 1 year, 8.04c.
Old Dominion Paper Company, 6 months, 7.599c.
The Champion Fiber Company, 6 months, 7.23c.; 1 year, 7.28c.

No. 46—40,000 lbs., No. 16; rolls, min. width 16 ins., max. width 24 ins. (3-inch cores); min. order, 10,000 lbs.

International Paper Company, 1 year, 7.44c.
Reese & Reese, 6 months, 6.977c.
Whiting-Patterson Company, Inc., 6 months, 7.83c.
The Aetna Paper Company, 6 months, 7.58c.; 1 year, 7.58c.
R. P. Andrews Paper Company, 1 year, 6.52c.
*S. L. Willson, 6 months, 7.04c.; 1 year, 7.04c.
Old Dominion Paper Company, 6 months, 7.909c.; 1 year, 7.909c.
The Champion Fiber Company, 6 months, 6.68c.; 1 year, 6.75c.

No. 47—150,000 lbs., No. 20; rolls, min. width 16 ins., max. width 24 ins. (3-inch cores).

International Paper Company, 1 year, 7.44c.
Reese & Reese, 6 months, 6.977c.
Whiting-Patterson Company, Inc., 1 year, 7.83c.
The Aetna Paper Company, 6 months, 7.58c.; 1 year, 7.58c.
R. P. Andrews Company, 1 year, 6.52c.
*S. L. Willson, 6 months, 7.04c.; 1 year, 7.04c.
Old Dominion Paper Company, 6 months, 7.459c.; 1 year, 7.459c.
The Champion Fiber Company, 6 months, 6.67c.; 1 year, 6.67c.

No. 48—30,000 lbs., blue, green, pink, salmon, and yellow, No. 13; cut 17x28, 21x32, and 22x34 ins., flat, min. order, one color, 5,000 lbs.

Reese & Reese, 6 months, 8.473c.
Whiting-Patterson Company, Inc., 1 year, 11.36c.
The Aetna Paper Company, 6 months, 9.48.c; 1 year, 9.48c.
*S. L. Willson, 6 months, 10.57c.; 1 year, 10.57c.
Old Dominion Paper Company, 9.97c. for 6 months.

No. 49—80,000 lbs., blue, green, pink, salmon, and yellow, Nos. 16 and 20; cut 17x28, 21x32, and 22x34 ins., flat, min. order, one color, 5,000 lbs.

Reese & Reese, 6 months, 7.977c.
Whiting-Patterson Company, Inc., in year, 9.23c.
The Aetna Paper Company, 6 months, 8.48c.; 1 year, 8.48c.
*S. L. Willson, 6 months, 9.81c.; 1 year, 9.81c.
Old Dominion Paper Company, 6 months, 9.439c.; 1 year, 9.439c.

White Writing, Tub-Sized, Air or Loft Dried

No. 50—80,000 lbs., No. 13; cut 23x36, 24x38, and 28x34 ins. flat.

Dobler & Mudge, 6 months, 17.94c.; 1 year, 17.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Company, 6 months, 17.08c.; 1 year, 17.78c.
R. P. Andrews Paper Company, 1 year, 18.0c.
*S. L. Willson, 6 months, 14.97c.; 1 year, 14.97c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

No. 51—1,200,000 lbs., No. 16; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Company, 6 months, 13.28c.; 1 year, 13.89c.
R. P. Andrews Paper Company, 1 year, 15.0c.
*S. L. Willson, 6 months, 12.17c.; 1 year, 12.17c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.

No. 52—90,000 lbs., No. 16; cut 22¾x31½ ins. flat.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Co., 6 months, 13.28c.; 1 year, 13.98c.
R. P. Andrews Paper Co., 1 year, 15.0c.
*S. L. Willson, 6 months, 12.17c.; 1 year, 12.17c.
Old Dominion Paper Co., 6 months, 13.499c.; 1 year, 13.499c.

No. 53—1,000,000 lbs., No. 20; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
Osburn Paper Company, Inc., Philadelphia, Pa., 6 months, 13.35c.
The Aetna Paper Company, 6 months, 12.78c.; 1 year, 13.28c.
R. P. Andrews Paper Company 1 year, 15.0c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.

No. 54—1,000,000 lbs., No. 20; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
Osburn Paper Company, Inc., 6 months, 12.32c.
The Aetna Paper Co., 6 months, 12.78c.; 1 year, 13.28c.
R. P. Andrews Paper Company, 1 year, 15.0c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.
The Whitaker Paper Company, 6 months, 11.37c.

No. 55—850,000 lbs., No. 24; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Company, 6 months, 12.88c.; 1 year, 13.38c.
R. P. Andrews Paper Company, 1 year, 15.0c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.

No. 56—850,000 lbs., No. 24; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Company, 6 months, 12.98c.; 1 year, 13.48c.
R. P. Andrews Paper Company, 15.0c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.

No. 57—10,000 lbs., No. 36; cut 19x24 and 20x28 ins., flat, min. order, 5,000 lbs.

Dobler & Mudge, 6 months, 14.94c.; 1 year, 14.94c.
Reese & Reese, 6 months, 14.275c.
The Aetna Paper Company, 6 months, 18.78c.; 1 year, 19.28c.
R. P. Andrews Paper Company, 1 year, 15.0c.
*S. L. Willson, 6 months, 12.97c.; 1 year, 12.97c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.

Colored Writing, Tub-Sized, Air or Loft Dried

No. 58—300,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 16; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.245c.
The Aetna Paper Company, 6 months, 14.48c.; 1 year, 14.48c.
R. P. Andrews Paper Company, 6 months, 16.0c.
*S. L. Willson, 6 months, 13.77c.; 1 year, 13.77c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

No. 59—325,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 20; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.245c.
The Aetna Paper Company, 6 months, 14.48c.; 1 year, 14.48c.
R. P. Andrews Paper Company, 1 year, 16.0c.
*S. L. Willson, 6 months, 13.67c.; 1 year, 13.67c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

No. 60—325,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 20; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.245c.
The Aetna Paper Company, 6 months, 14.48c.; 1 year, 14.48c.
R. P. Andrews Paper Company, 1 year, 16.0c.
*S. L. Willson, 6 months, 13.67c.; 1 year, 13.67c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

No. 61—250,000 lbs., blue, buff, green, dark pink, light pink, salmon, and yellow, No. 24; cut any size, flat, min. width 17 ins., max. width 32 ins.

Dobler & Mudge, 6 months, 15.95.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.245c.
The Aetna Paper Company, 6 months, 14.48c.; 1 year, 14.48c.
R. P. Andrews Paper Company, 1 year, 16.0c.
*S. L. Willson, 6 months, 13.67c.; 1 year, 13.67c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

Fine White Writing, Tub-Sized and Loft Dried

No. 62—2,500 lbs., Nos. 28 and 32, cut 21x32 ins., flat, min. order, 2,500 lbs.

Reese & Reese, 6 months, 25.895c.
R. P. Andrews Paper Company, 1 year, 24.9c.
*S. L. Willson, 6 months, 27.98c.; 1 year, 27.98c.
Old Dominion Paper Company, 6 months, 25.49c.; 1 year, 25.49c.

Map, Lithograph Finish (Sample A)

No. 63—40,000 lbs., Nos. 16 and 20, cut any size, flat, min. width 24 ins., max. width 44 ins., min. order, 5,000 lbs.

Dobler & Mudge, 6 months, 14.46c.; 1 year, 14.46c.
Reese & Reese, 6 months, 12.895c.
Osburn Paper Company, Inc., 6 months, 13.24c.
*S. L. Willson, 6 months, 13.19c.; 1 year, 13.19c.
Barton, Duer & Koch Paper Company, 6 months, 12.35c.; 1 year, 12.35c.
Old Dominion Paper Company, 6 months, 12.999c.; 1 year, 12.999c.
The Whitaker Paper Company, 6 months, 12.97c.

Map, Lithograph Finish, Tub-Sized, Air or Loft Dried (Sample B)

No. 64—50,000 lbs., Nos. 16 and 20, cut any size, flat, min. width 24 ins., max. width 44 ins., min. order, 5,000 lbs.

Esleeck Manufacturing Company, Turners Falls, Mass., 6 months, 27.0c.; 1 year, 27.0c.
Dobler & Mudge, 6 months, 16.94c.; 1 year, 16.94c.
Reese & Reese, 6 months, 18.785c.
Osburn Paper Company, Inc., 6 months, 18.35c.
R. P. Andrews Paper Company, 6 months, 17.9c.; 1 year, 17.9c.
*S. L. Willson, 6 months, 18.97c.; 1 year, 18.97c.
The Barton, Duer & Koch Company, 6 months, 16.05c.; 1 year, 16.05c.

Manifold Bond, White and Colored, Glazed and Unglazed, Tub-Sized, Air or Loft Dried

No. 65—160,000 lbs., tub-sized, air or loft dried, No. 9; cut 17x28, 19x24, 21x32, and 22½x34½ ins. flat.

Esleeck Manufacturing Company, 6 months, 27c.; 1 year, 27c.
Dobler & Mudge, 6 months, 18.86c.; 1 year, 18.86c.
Import Paper Company, 6 months, 28c., on sample 2 per cent discount; 1 year, 28c., on sample 2 per cent discount.
R. P. Andrews Paper Company, 6 months, 18.65c.; 1 year, 18.65c.
Old Dominion Paper Company, 6 months, 20.49c.; 1 year, 20.49c.

No. 66—60,000 lbs., tub-sized, air or loft dried, No. 13; cut 21x32, 22x34, 24x38, and 28x34 ins. flat.

Esleeck Manufacturing Company, 6 months, 26.0c.; 1 year, 26.0c.
Dobler & Mudge, 6 months, 14.86c.; 1 year, 14.86c.
Import Paper Company, 6 months, 28c.; 1 year, 28c.; on sample 2 per cent discount on both 6 months and 1 year.
Reese & Reese, 6 months, 18.295c
The Aetna Paper Company, 6 months, 18.18c.; 1 year, 18.18c.
R. P. Andrews Paper Company, 6 months, 14.7c.; 1 year, 14.7c.
*S. L. Willson, 6 months, 16.97c. unglazed; 18.47c. glazed; 1 year, 16.97c. unglazed; 18.47c. glazed.
Old Dominion Paper Company, 6 months, 14.999c.; 1 year, 14.999c.

No. 67—5,000 lbs., tub-sized, air or loft dried, blue, buff, green, pink, salmon, and yellow, No. 9; cut 17x28, 21x32, and 22x34 ins., flat, min. order, 1,000 lbs.

Esleeck Manufacturing Company, 6 months, 28.0c.; 1 year, 28.0c.
Import Paper Company, 6 months, 30c., on sample, 2 per cent discount; 1 year 30c., on sample, 2 per cent discount.

No. 68—30,000 lbs., tub-sized, air or loft dried, blue, buff, green, pink, salmon, and yellow, No. 13; cut 21x32, 22x34, 24x38, and 28x34 ins., flat, min. order, one color, 3,000 lbs.

Esleeck Manufacturing Company, 6 months, 27c.; 1 year, 27c.; based on furnishing paper, in accordance with specifications, except dried by special process.
The Aetna Paper Company, 6 months, 19.88c.; 1 year, 19.88c.

Record Manifold Bond, White, Unglazed, Tub-Sized, Air or Loft Dried

No. 69—25,000 lbs., White Record Manifold Bond Paper, Unglazed, Tub-sized, Air or Loft Dried, No. 9; cut 17x28, 19x24, 21x32, and 22½x34½ ins., flat, min. order, 5,000 pounds.

Esleeck Manufacturing Company, 6 months, 37c.; 1 year, 37c.
Import Paper Company, 6 months, 38.5c.; 1 year, 38.5c.; on sample, less 2 per cent.
Old Dominion Paper Company, 6 months, 54.98c.

Onionskin

No. 70—5,000 lbs., No. 8, cut 19x24 and 21x32 ins., flat, min. order 1,000 lbs.

Esleeck Manufacturing Company, 6 months, 30c.; 1 year, 30c.
Import Paper Company, 28c. for 6 months, and 28c. for 1 year, less 2 per cent.
Old Dominion Paper Company, 6 months, 20.99c.; 1 year, 20.99c.

Sulphite Bond, White

No. 71—250,000 lbs., Nos. 16 and 20, cut any size, flat, min. width 17 ins., max. width 32 ins.

The Canfield Paper Company, New York City, 6 months, 9.14c.
International Paper Company, 1 year, 8.615c.
Reese & Reese, 6 months, 7.735c.
Whiting-Patterson Company, Inc., 6 months, 8.88c.
The Aetna Paper Company, 6 months, 8.48c.; 1 year, 8.48c.
R. P. Andrews Paper Company, 1 year, 7.72c.
*S. L. Willson, 6 months, 7.97c.; 1 year, 7.97c.
The Barton, Duer & Koch Paper Company, 6 months, 8.9c.
Old Dominion Paper Company, 6 months, 7.248c.; 1 year, 7.248c.
The Whitaker Paper Company, 6 months, 13c. on standard sample; 10.69c. on specification.
The Champion Fiber Company, 6 months, 7.28c.; 1 year, 7.38c.

Stationery Bond, White and Colored, Glazed and Unglazed, Tub-Sized, Air or Loft Dried

No. 72—50,000 lbs., Nos. 16 and 24, cut 17x28, 18x23, and 21x32 ins. flat.
Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.577c.
Carew Manufacturing Company, South Hadley Falls, Mass., 6 months, 18c.; 1 year, 18c.
The Whitaker Paper Company, 6 months, 11.77c.

No. 73—250,000 lbs., No. 20; cut any size, flat, min. width 17 ins., max. width 32 ins.
Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.577c.
Carew Manufacturing Company, 6 months, 18c.; 1 year, 18c.
The Aetna Paper Company, 6 months, 17.48c.; 1 year, 17.48c.
R. P. Andrews Paper Company, 1 year, 16c.
*S. L. Willson, 6 months, 13.77c.; 1 year, 13.77c.
Barton, Duer & Koch Paper Company, 6 months, 11.64c.; 1 year, 11.64c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.
The Whitaker Paper Company, 6 months, 11.77c.

No. 74—250,000 lbs., No. 20, cut any size, flat, min. width 17 ins., max. width 32 ins.
Dobler & Mudge, 6 months, 15.94c.; 1 year, 15.94c.
Reese & Reese, 6 months, 15.577c.
Carew Manufacturing Company, 6 months, 18c.; 1 year, 18c.
The Aetna Paper Company, 6 months, 17.48c.; 1 year, 17.48c.
R. P. Andrews Paper Company, 1 year, 16c.
*S. L. Willson, 6 months, 13.77c.; 1 year, 13.77c.
The Barton, Duer & Koch Paper Company, 6 months, 11.64c.; 1 year, 11.64c.
Old Dominion Paper Company, 6 months, 13.499c.; 1 year, 13.499c.
The Whitaker Paper Company, 6 months, 11.77c.

No. 75—15,000 lbs., blue, green, pink, salmon, and yellow, Nos. 16 and 20; cut any size, flat, min. width 17 ins., max. width 32 ins., min. order, one color, 2,500 lbs.
Dobler & Mudge, 6 months, 16.94c.; 1 year, 16.94c.
Reese & Reese, 6 months, 16.727c.
Carew Manufacturing Company, 6 months, 19c.; 1 year, 19c.
The Aetna Paper Company, 6 months, 19.48c.; 1 year, 19.48c.
R. P. Andrews Paper Company, 1 year, 17c.
Old Dominion Paper Company, 6 months, 14.499c.; 1 year, 14.499c.

Fine Bond, White, Glazed and Unglazed, Tub-Sized and Loft Dried

No. 76—2,000 lbs., Nos. 16, 20, and 24; cut 16x21 and 17x22 ins., flat, min. order, 2,000 lbs.
Reese & Reese, 6 months, 25.895c.
R. P. Andrews Paper Company, 1 year, 31.9c.

Declaration Bond, White, Tub-Sized and Loft Dried

No. 77—5,000 lbs., No. 20; cut 17x22 ins., flat, min. order, 5,000 lbs.
Reese & Reese, 6 months, 26.97c.
R. P. Andrews Paper Company, 1 year, 31.9c.
Old Dominion Paper Company, 6 months, 33.99c.; 1 year, 33.99c.

Parchment Deed

No. 78—1,000 lbs., Tub-sized and Loft-dried, Nos. 32 and 36; cut 33x34 ins., flat, min. order, 1,000 lbs.
No bids.

Commercial Ledger, White and Colored, Tub-Sized, Air or Loft Dried

No. 79—70,000 lbs., No. 28; cut any size, flat, min. width 17 ins., max. width 32 ins.
Dobler & Mudge, 6 months, 18.69c.; 1 year, 18.69c.
Reese & Reese, 6 months, 19.695c.
Carew Manufacturing Company, 6 months, 18.4c.; 1 year, 18.4.
The Aetna Paper Company, 6 months, 17.48c.; 1 year, 17.48c.
R. P. Andrews Paper Company, 6 months, 17.95c.; 1 year, 17.95c.
*S. L. Willson, 6 months, 15.97c.; 1 year, 15.97c.
Barton, Duer & Koch Paper Company, 6 months, 15.79c.; 1 year, 15.79c.
Old Dominion Paper Company, 6 months, 15.968c.; 1 year, 15.968c.
The Whitaker Paper Company, 6 months, 15.97c.

No. 80—120,000 lbs., No. 32; cut 21x32 and 23x36 ins. flat.
Dobler & Mudge, 6 months, 18.69c.; 1 year, 18.69c.
Reese & Reese, 6 months, 19.695c.
Carew Manufacturing Company, 6 months, 18.4c.; 1 year, 18.4c.
The Aetna Paper Company, 6 months, 17.48c.; 1 year, 17.48c.
R. P. Andrews Paper Company, 6 months, 17.95c.; 1 year, 17.95c.
*S. L. Willson, 6 months, 15.97c.; 1 year, 15.97c.
Barton, Duer & Koch Company, 6 months, 15.79c.; 1 year, 15.79c.
Old Dominion Paper Company, 6 months, 15.968c.; 1 year, 15.968c.
The Whitaker Paper Company, 6 months, 15.97c.

No. 81—150,000 lbs., Nos. 36 and 40, cut 19x24, 20x28, and 21x32 ins., flat. (Strength shall be not less than 58 points, No. 40).
Dobler & Mudge, 6 months, 18.69c.; 1 year, 18.69c.
Reese & Reese, 6 months, 19.695c.
Carew Manufacturing Company, 6 months, 18.4c.; 1 year, 18.4c.
The Aetna Paper Company, 6 months, 17.48c.; 1 year, 17.48c.
R. P. Anderson Paper Company, 6 months, 17.95c.; 1 year, 17.95c.
*S. L. Willson, 6 months, 15.97c.; 1 year, 15.97c.
Barton, Duer & Koch Paper Company, 6 months, 15.79c.; 1 year, 15.79.
Old Dominion Paper Company, 6 months, 15.968c.; 1 year, 15.968c.
The Whitaker Paper Company, 6 months, 15.97c.

No. 82—50,000 lbs., No. 48, cut 21x32½ ins., flat. (Without watermark. Strength shall be not less than 65 points). Min. order, 10,000 lbs.
Dobler & Mudge, 6 months, 18.69c.; 1 year, 18.69c.
Carew Manufacturing Company, 6 months, 18.4c.; 1 year, 18.4c.
R. P. Andrews Paper Company, 6 months, 17.95c.; 1 year, 17.95c.
*S. L. Willson, 6 months, 15.97c.; 1 year, 15.97c.
Barton, Duer & Koch Paper Company, 6 months, 18.69c.; 1 year, 18.69c.
Old Dominion Paper Company, 6 months, 18.884c.; 1 year, 18.884c.

No. 83—50,000 lbs., No. 60; cut 21x32½ ins., flat. (Without watermark. Strength shall be not less than 80 points). Min. order, 10,000 lbs.
Dobler & Mudge, 6 months, 20.94c.; 1 year, 20.94c.
Carew Manufacturing Company, 6 months, 18.4c.; 1 year, 18.4c.
R. P. Andrews Paper Company, 6 months, 18.64c.; 1 year, 18.64c.
*S. L. Willson, 6 months, 15.97c.; 1 year, 15.97c.
Barton, Duer & Koch, 6 months, 18.69c.; 1 year, 18.69c.
Old Dominion Paper Company, 6 months, 18.884c.; 1 year, 18.884c.

No. 84—160,000 lbs., blue, buff, green, pink, salmon, and yellow, Nos. 28, 32, and 36, cut 17x28, 18½x36, 19x24, 21x32, and 23x36 ins. flat.
Dobler & Mudge, 6 months, 20.94c.; 1 year, 20.94c.
Reese & Reese, 6 months, 20.695c.
Carew Manufacturing Company, 6 months, 19.4c.; 1 year, 19.4c.
The Aetna Paper Company, 6 months, 18.48c.; 1 year, 18.48c.
*S. L. Willson, 6 months, 19.47c.; 1 year, 19.47c.
Old Dominion Paper Company, 6 months, 18.999c.; 1 year, 18.999c.

No. 85—50,000 lbs., blue, buff, green, pink, salmon, and yellow, No. 48; cut 21x32½ ins., flat. (Without watermark. Strength shall be not less than 65 points). Min. order, one color, 2,000 lbs.
Dobler & Mudge, 6 months, 20.94c.; 1 year, 20.94c.
Carew Manufacturing Company, 6 months, 19.4c.; 1 year, 19.4c.
*S. L. Willson, 6 months, 21.47c.; 1 year, 21.47c.

No. 86—40,000 lbs., blue, buff, green, pink, salmon, and yellow, No. 60; cut 21x32½ ins., flat. (Without watermark. Strength shall be not less than 80 points). Min. order, one color, 2,000 lbs.
Dobler & Mudge, 6 months, 22.94c.; 1 year, 22.94c.
*S. L. Willson, 6 months, 21.47c.; 1 year, 21.47c.
Carew Manufacturing Company, 6 months, 21.4c.; 1 year, 21.4c.

Ledger, White, Tub-Sized and Loft Dried

No. 87—50,000 lbs., No. 24; cut 17x28, 21x32, 22¼x31½, and 24x38 ins. flat.
Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Barton, Duer & Koch Paper Company, 6 months, 25.99c.; 1 year, 25.99c.
Old Dominion Paper Company, 6 months, 29.498c.; 1 year, 29.498c.
The Whitaker Paper Company, 6 months, 26.25c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.

No. 88—70,000 lbs., No. 28; cut 17x28, 20x28, 21x32, 23x36, 24x38, and 28x34 ins. flat.
Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Barton, Duer & Koch, 6 months, 25.99c.; 1 year, 25.99c.
Old Dominion Paper Company, 6 months, 29.498c.; 1 year, 29.498c.
The Whitaker Paper Company, 6 months, 26.25c.

No. 89—40,000 lbs., No. 32; cut 17x28, 18½x42, 21x32, and 23x36 ins. flat.
Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Old Dominion Paper Company, 6 months, 30.997c.; 1 year, 30.997c.

No. 90—20,000 lbs., No. 36; cut 17x28, 20x28, 21x32, and 24x38 ins. flat.

Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Old Dominion Paper Company, 6 months, 30.997c.; 1 year, 30.997c.

No. 91—20,000 lbs., No. 40; cut 21x32½ and 21x42 ins., flat. (Strength shall be not less than 88 points).

Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Old Dominion Paper Company, 6 months, 30.997c.; 1 year, 30.997c.

No. 92—40,000 lbs., No. 48; cut 20½x24¾, 21x32½, and 22¾x31½ ins., flat. (Without watermark. Strength shall be not less than 100 points).

Dobler & Mudge, 6 months, 24.94c.; 1 year, 24.94c.
Carew Manufacturing Company, 6 months, 27.9c.; 1 year, 27.9c.
R. P. Andrews Paper Company, 6 months, 34.7c.
*S. L. Willson, 6 months, 29.77c.; 1 year, 29.77c.
Old Dominion Paper Company, 6 months, 30.997c.; 1 year, 30.997c.

Heavy Ledger, White, Single-Ply, Tub-Sized and Loft Dried

No. 93—150,000 lbs., No. 60; cut 20½x30½ and 21x32½ ins. flat.

Dobler & Mudge, 6 months, 26.46c.; 1 year, 26.46c.
Carew Manufacturing Company, 6 months, 25.9c.; 1 year, 25.9c.
R. P. Andrews Paper Company, 6 months, 26.35c.; 1 year, 26.35c.
*S. L. Willson, 6 months, 26.17c.; 1 year, 26.17c.
Barton, Duer & Koch Paper Company, 6 months, 26.38c.; 1 year, 26.38c.
Old Dominion Paper Company, 6 months, 26.674c.; 1 year, 26.674c.

White Tissue

No. 94—1,500 lbs., 20x30—8; flat, min. order, 500 lbs.

Reese & Reese, 6 months, 12.15c.
R. P. Andrews Paper Company, 6 months, 24.5c.
Whitaker Paper Company, 6 months, 31.0c.

Facing Stereo

No. 95—600 lbs., Facing Stereo Tissue Paper, 19x24—4½; min. order, 300 lbs.

Whitaker Paper Company, 6 months, 73.0c.

Coated Cover, Colored

No. 96—150,000 lbs., india tint, light green, and primrose, 26½x41—104; flat.

Kalamazoo Paper Company, 6 months, 9.0c.
Allied Paper Mills, 6 months, 9.895c.
The Broderick Paper Company, 6 months, 8.98c.
Thomas, Barrett & Son, New York City, 6 months, 11.12c. on sample.
Reese & Reese, 6 months, 9.475c.
Whitaker Paper Company, 6 months, 8.95c.; 1 year, 8.95c.

Antique Cover, Colored (Sample A)

No. 97—25,000 lbs., quaker drab, robin's egg, and terra cotta, 20x25—48; flat, in wrapped bundles, with projecting colored-paper marker between reams, min. order, one color, 5,000 lbs.

Knowlton Brothers, Watertown, N. Y., 1 year, 8.91c.
Dobler & Mudge, 6 months, 9.94c.
Thomas, Barrett & Son, on sample, c. l., 10.8c.; l. c. l., 10.50c., for 6 months.
Reese & Reese, 6 months, 9.89c.
Mathers-Lamm Paper Company, 6 months, c. l., 9.60c.; l. c. l., 9.98c.
Whiting-Patterson Company Inc., 6 months, 10.23c.
R. P. Andrews Paper Company, 6 months, 8.99c.; 1 year, 8.99c.
*S. L. Willson, 6 months, 8.47c.; 1 year, 8.47c.
The Barton, Duer & Koch Paper Company, 6 months, 11.85c.; 1 year, 11.85c.
Old Dominion Paper Company, 6 months, 9.747c.
Whitaker Paper Company, 6 months, 9.97c.
F. T. Parsons Paper Company, Washington, D. C., 6 months, 10.4c.

Antique Cover, Colored (Sample B)

No. 98—80,000 lbs., dawn, sage, goblin blue, suède, khaki, and moss green, 20x25—48; flat, in wrapped bundles, with projecting colored-paper marker between reams.

Knowlton Brothers, 1 year, 9.91c.
Dobler & Mudge, 6 months, 10.34c.
Thomas, Barrett & Son, on sample 6 months, c. l., 10.50c.; l. c. l., 10.92c.
Reese & Reese Company, 10.29c. for 6 months.
Mathers-Lamm Paper Company, 6 months, 9.98c., c. l.; 10.38c., l. c. l.
Whiting-Patterson Company, Inc., 6 months, 10.64c.
R. P. Andrews Paper Company, 6 months, 9.49c.; 1 year, 9.49c.
*Sidney L. Willson, 6 months, 8.97c.; 1 year, 8.97c.
Barton, Duer & Koch Paper Company, 6 months, 12.08c.
Old Dominion Paper Company, 6 months, 9.989c.
The Whitaker Paper Company, 6 months, 10.97c.
F. T. Parsons Paper Company, 6 months, 10.7c.

Machine-Finish Cover, Colored

No. 99—125,000 lbs., dark blue, light blue, brown, granite, green, pink, tea, and yellow, 20x26—50; cut 20x25 and 33x46 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams.

Knowlton Brothers, 1 year, 8.91c.
Thomas Barrett & Son, on sample, 6 months, c. l., 10.08c.; l. c. l., 10.50c.
Reese & Reese, 6 months, 9.89c.
Mathers-Lamm, 6 months, c. l., 9.58c.; l. c. l., 9.97c.
R. P. Andrews Paper Company, 6 months, 8.99c.; 1 year, 8.99c.
*S. L. Willson, 6 months, 8.47c.; 1 year, 8.47c.
Barton, Duer & Koch Paper Company, 6 months, 11c.
Old Dominion Paper Company, 6 months, 9.349c.
Whitaker Paper Company, 6 months, 9.97c.
F. T. Parsons Paper Company, 6 months, 10.3c.

Cloth-Lined Cover

No. 100—1,000 sheets, brown, quaker drab, russet, and white, 20x26—65; cut 20x25 ins. flat.

Dobler & Mudge, 6 months, 7.8c.
Mathers-Lamm Paper Company, 6 months, 8.55c.; 1 year, 8.55c.; not less than 1,000 sheets of any one color.
R. P. Andrews Paper Company, 6 months, 8.50c.

No. 101—1,000 sheets, brown, quaker drab, russet, and white, 20x26—65; cut 21x32; flat.

Dobler & Mudge, 6 months, 12.5c.
Mathers-Lamm Paper Company, 6 months, 13.5c.; 1 year, 13.5c.; not less than 1,000 sheets of any color.
R. P. Andrews Paper Company, 6 months, 13.7c.

No. 102—2,000 sheets, brown, quaker drab, russet, and white, 20x26—65; cut 24x36 ins. flat.

Dobler & Mudge, 6 months, 14c.
Mathers-Lamm Paper Company, 6 months, 15.3c.; 1 year, 15.3c.; not less than 1,000 sheets of any one color.
R. P. Andrews Paper Company, 6 months, 14.8c.

Wood Manila Wrapping

No. 103—150,000 lbs., 24x36—38 to 60; cut 21x32 and 25x38 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams.

Beaver Bulp and Paper Company, Inc., 6 months, 4.77c.; 1 year, 4.77c.
Samuel S. Alcorn, Philadelphia, Pa., 6 months, 5.25c.; 1 year, 5.25c.
Reese & Reese, 6 months, 4.942c.
Osburn Paper Company, Inc., 6 months, 5.38c.
Whiting-Patterson Company, Inc., 1 year, 5.19c.
R. P. Andrews Paper Company, 6 months, 4.22c.; 1 year, 4.22c.
Charles G. Stott & Co., Washington, D. C., 6.05c., c. l., on sample.
Old Dominion Paper Company, 6 months, 4.969c.
Whitaker Paper Company, 6 months, 5.08c.

No. 104—700,000 lbs., 24x36—38 to 60; rolls, 9, 18, and 21 ins. wide (3-inch cores; except 9-in. rolls, which shall be wound on wooden plugs, 1½-in. hole).

Beaver Pulp and Paper Company, Inc., 6 months, 4.54c.; 1 year, 4.54c.
Samuel S. Alcorn, 6 months, 5.25c.; 1 year, 5.25c.
Reese & Reese, 6 months, 4.942c.
Osburn Paper Company, Inc., 6 months, 5.64c.
Whiting-Patterson Company, Inc., 1 year, 4.94c.
R. P. Andrews Paper Company, 6 months, 4.19c.; 1 year, 4.19c.
Charles G. Stott & Co., 6 months, 5.8c., c. l. on sample.
Old Dominion Paper Company, 6 months, 4.723c.
Whitaker Paper Company, 6 months, 4.83c.

Sulphite Manila Wrapping

No. 105—120,000 lbs., 24x36—50 to 80; cut any size; flat, in wrapped bundles, with projecting colored-paper marker between reams.

Reese & Reese, 6 months, 6.544c.
Osburn Paper Company, Inc., 6 months, 7.84c.
Whiting-Patterson Company, Inc., 6 months, 7.29c.
R. P. Andrews Paper Company, 6 months, 6.97c.
Charles G. Stott & Co., 6 months, 7.23c., c. l. on sample.
Old Dominion Paper Company, 6 months, 6.998c.

No. 106—12,000 lbs., 24x36—70; rolls, 11½ ins. wide, wound on wooden plugs, 1½-in. hole, min. order, 5,000 lbs.

Reese & Reese, 6 months, 6.544c.
Import Paper Company, 6 months, 6.4c.; 1 year, 6.4c. on sample.
Osburn Paper Company, Inc., 6 months, 7.84c.
Whiting-Patterson Company, Inc., 6 months, 7.09c.
R. P. Andrews Paper Company, 6 months, 7.15c.
Charles G. Stott & Co., 6 months, c. l., 7.49c., on sample.
Old Dominion Paper Company, 6 months, 7.498c.

Kraft Wrapping

No. 107—175,000 lbs., 24x36—50 to 80; cut any size, flat, in wrapped bundles, with projecting colored-paper marker between reams.

Old Dominion Paper Company, 6 months, 6.699c.; 1 year, 6.74c.
Whitaker Paper Company, 6 months, 5.84c.

No. 108—6,000 lbs., 24x36—50 to 80; rolls, 24 in. wide, wound on wooden plugs, 1½-in. hole, min. order, 2,000 lbs.

Import Paper Company, 6 months, 6.4c.; 1 year, 6.4c. on sample.
Old Dominion Paper Company, 6 months, 6.79c.; 1 year, 6.99c.
The Whitaker Paper Company, 6 months, 5.84c.

Rope Manila Wrapping

No. 109—10,000 lbs., 24x36—60; cut 24x38, 27x38, and 40x42 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams, min. order 5,000 lbs.

The Broderick Paper Company, 6 months, 10.56c.
Domestic Mills Paper Company, New York, 6 months, 11.0531c.
R. P. Andrews Paper Company, 6 months, 10.68c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 10.744c.
The Whitaker Paper Company, 6 months, 10.71c.

No. 110—15,000 lbs., 24x36—70; cut 24x38 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams, min order, 5,000 lbs.

The Broderick Paper Company, 6 months, 10.56c.
Domestic Mills Paper Company, 6 months, 11.0531c.
R. P. Andrews Paper Company, 10.68c. for 6 months.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 10.744c.
Whitaker Paper Company, 6 months, 10.71c.

No. 111—25,000 lbs., 24x36—80; cut 27x38, 33x33, and 38x38 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams, min. order, 5,000 lbs.

Broderick Paper Company, 6 months, 10.56c.
Domestic Mills Paper Company, 6 months, 11.0531c.
R. P. Andrews Paper Company, 6 months, 10.67c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 10.744c.
Whitaker Paper Company, 6 months, 10.71c.

No. 112—50,000 lbs., 24x36—140; cut 24x38 ins., flat, in wrapped bundles, with projecting colored-paper marker between reams. (Strength shall be not less than 120 points). Min. order, 10,000 lbs.

Broderick Paper Company, 6 months, 10.56c.
Domestic Mills Paper Company, 6 months, 11.0531c.
R. P. Andrews Paper Company, 6 months, 10.67c.
*S. L. Willson, 6 months, 11.97c.; 1 year, 11.97c.
Old Dominion Paper Company, 6 months, 10.744c.
Whitaker Paper Company, 10.71c.

Sulphite Manila

No. 113—250,000 lbs., 24x36—100 to 140; cut any size, flat, in wrapped bundles, with projecting colored-paper marker between reams.

Port Huron Sulphite and Paper Company, Port Huron, Mich., 6 months, 5.78c.; 1 year, 5.78c., in c. l. lots.
Samuel S. Alcorn, 6 months, 5.80c.; 1 year, 5.80c.
Reese & Reese, 6 months, 6.795c.
Osburn Paper Company, Inc., 6 months, 7.825c.
Whiting-Patterson Company, Inc., 6 months, 7.29c.
R. P. Andrews Paper Company, 6 months, 6.45c.
Barton, Dyer & Koch Paper Company, 6 months, 8.49c.
Charles G. Stott & Co., 6 months, 8.80c., c. l., on sample.
Old Dominion Paper Company, 6 months, 5.924c.; 1 year, 5.924c.
Whitaker Paper Company, 6 months, 6.89c.; 1 year, 6.89c.

No. 114—80,000 lbs., 24x36—80; rolls, 18 ins. wide.

Port Huron Sulphite and Paper Company, 6 months, 5.71c.; 1 year, 5.71c. in c. l. lots.
Samuel S. Alcorn, 6 months, 5.65c.; 1 year, 5.65c., bid based on award for both lots.
Reese & Reese, 6 months, 6.544c.
Osburn Paper Company, Inc., 6 months, 7.83c.
Whiting-Patterson Company, Inc., 6 months, 7.09c.
R. P. Andrews Paper Company, 6 months, 6.45c.
Barton, Duer & Koch Paper Company, 6 months, 8.25c.
Charles G. Stott & Co., 6 months, 8.54c., c. l., on sample.
Old Dominion Paper Company, 6 months, 5.449c.; 1 year, 5.449c.

Wood Manila Tag

No. 115—40,000 lbs., 22½x28½—75; rolls, 21¾ ins. wide (6-inch cores).

Old Dominion Paper Company, 5.29c., on three-inch cores.

Calendered Tag, Manila and Colored

No. 116—100,000 lbs., Manila, 22½x28½—approximately 75; rolls, 24 and 26¾ ins. wide (6-inch cores).

R. P. Andrews Paper Company, 6 months, 7.54c.
Barton, Duer & Koch Paper Company, 6 months, 8.24c.
Charles G. Stott & Co., 6 months, 8.54c., c. l., on sample.
Whitaker Paper Company, 6 months, 8.90c. in 24-inch rolls only.

No. 117—100,000 lbs, Colored, blue, brown, green, pink, and salmon, 22½x28½—approximately 75; min. thickness .0060 in., max. thickness .0068 in., rolls, 24 and 26¾ ins. wide (6-inch cores). Min. order, one color, 10,000 lbs.

R. P. Andrews Paper Company, 6 months, 7.97c.
Barton, Duer & Koch Paper Company, 6 months, 8.87c.
Charles G. Stott, 6 months, 9.20c., c. l., on sample.
Whitaker Paper Company, 6 months, 9.52c. in 24-inch rolls only.

Jute Tag

No. 118—100,000 lbs., 22½x28½—100 to 140; cut any size, flat, in wrapped bundles, with projecting colored-paper marker between reams.

Dobler & Mudge, 6 months, 9.23c.
The Broderick Paper Company, 6 months, 9.10c.
Domestic Mills Paper Company, 6 months, 9.5108c.
Reese & Reese, 6 months, 9.17c.
Osburn Paper Company, Inc., 6 months, 13c.
R. P. Andrews Paper Company, 6 months, 9.17c.
*S. L. Willson, 6 months, 9.17c.; 1 year, 9.17c.
Barton, Duer & Koch Paper Company, 6 months, 9.18c.
Old Dominion Paper Company, 6 months, 9.248c.
Whitaker Paper Company, 6 months, 9.21c.

Manila Board

No. 119—20,000 lbs., 22x28—196; cut 17x28, 21x32, and 22½x28½ ins., flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order, 5,000 lbs.

R. P. Andrews Paper Company, 6 months, 8.97c.; 1 year, 8.97c.
Old Dominion Paper Company, 6 months, 6.49c.; 1 year, 6.49c.
Whitaker Paper Company, 6 months, 6.11c.

Railroad Board, White and Colored

No. 120—35,000 lbs., 22x28—196; flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order, 4,000 lbs.

Dobler & Mudge, 6 months, 8.94c.; 1 year, 8.94c.
R. P. Andrews Paper Company, 6 months, 8.97c.; 1 year, 8.97c.
Old Dominion Paper Company, 6 months only, 7.14c., on sample per shade.
Whitaker Paper Company, 6 months, 11c.

No. 121—10,000 lbs., ash gray, blue, buff, green, lemon, and orange, 22x28—196; flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order, one color, 2,000 lbs.

Dobler & Mudge, 6 months, 9.94c.; 1 year, 9.94c.
R. P. Andrews Paper Company, 6 months, 9.97c.; 1 year, 9.97c.
Old Dominion Paper Company, 6 months, 8.26c.
Whitaker Paper Company, 6 months, 12c.

Wood Bristol, Colored

No. 122—300,000 lbs., buff, blue, gray, green, melon, pink, quaker drab, and yellow, 21x31—102; flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets.

Reese & Reese, 6 months, 5.433c.
Whiting-Patterson Company, 6 months, 5.29c.
R. P. Andrews Paper Company, 6 months, 5.04c.; 1 year, 5.04c.
Old Dominion Paper Company, 6 months, 5.299c.; 1 year, 5.844c.

No. 123—300,000 lbs., blue, brown, buff, gray, green, melon, pink, and yellow, 22½x28½—100; rolls, 20 ins. wide (6-inch cores).

Reese & Reese, 6 months, 5.188c.
Whiting-Patterson Company, 6 months, 5.29c.
R. P. Andrews Paper Company, 6 months, 5.04c.; 1 year, 5.04c.
Old Dominion Paper Company, 5.344c., restriction on rolls.

No. 124—300,000 lbs., blue, brown, buff, gray, green, melon, pink, and yellow, 22½x28½—100; rolls, 20 ins. wide (6-inch cores).

Reese & Reese, 6 months, 5.188c.
Whiting-Patterson Company, 6 months, 5.29c.
R. P. Andrews Paper Company, 6 months, 5.04c.; 1 year, 5.04c.

Bristol, White and Colored

No. 125—36,000 lbs., 22½x28½—120 flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets. Min. order, 15,000 lbs.

R. P. Andrews Paper Company, 6 months, 13.65c.; 1 year, 13.65c.
*S. L. Willson, 6 months, 11.47c.; 1 year, 11.47c.
The Whitaker Paper Company, 6 months, 13.20c.

No. 126—5,000 lbs., blue, brown, gray, green, melon, pink, and yellow, 22½x28½—100 flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets. Min. order, one color, 2,000 lbs.
The Whitaker Paper Company, 6 months, 13.45c.

U. S. Postal Card Bristol, Cream

No. 127—7,500,000 lbs. 22½x28½—104; rolls, 44½ ins. wide and not exceeding 32 ins. in diameter (6-inch cores).
Dill & Collins Company, Philadelphia, 6 months, 3.95c.; 1 year, 3.95c.
Champion Coated Paper Company, Hamilton, O., 6 months, 6.84c.; 1 year, 6.84c.
R. P. Andrews Paper Company, 1 year, 6.37c.
*S. L. Willson, 6 months, 6.72c.; 1 year, 6.72c.
Old Dominion Paper Company, 6.642c., 6 months; 1 year, 6.642c., limited to 1,000,000 pounds.
The Champion Fiber Company, 6 months, 6.61c.; 1 year, 6.61c.

Index Bristol, White and Colored

No. 128—3,000 lbs., 22½x28½—181 flat; min. order, 1,500 lbs.
Carew Manufacturing Company, 6 months, 23.0c.; 1 year, 23.0c.
Old Dominion Paper Company, 6 months, 27.89c.; 1 year, 28.89c.

No. 129—10,000 lbs., blue, buff, fawn, green, pink, salmon, and yellow, 22½x28½—181 flat; min. order, one color, 2,000 lbs.
Carew Manufacturing Company, 6 months, 24c.; 1 year, 24c.
Old Dominion Paper Company, 6 months, 27.89c.; 1 year, 28.89c.

Paraffin, White

No. 130—1,500 lbs., 24x38—16 flat, min. order, 500 lbs.
Dobler & Mudge, 6 months, 18c.; 1 year, 18c.
The Whitaker Paper Company, 6 months, 16c.

Noncurling Gummed, White and Colored

No. 131—4,000 lbs., 17x22—23, and 20x24—30 flat, min. order, 1,000 lbs.
Mathers-Lamm Paper Company, 6 months, 16.48c.; 1 year, 16.48c.
Whiting-Patterson Company, 1 year, 16c.
R. I. Andrews Paper Company, 6 months, 16.4c.; 1 year, 16.4c.
Barton, Duer & Koch Company, 6 months, 15.49c.

No. 132—250 lbs., blue and pink, 17x22—23, and 20x24—30 flat, min. order, 250 lbs.
Whiting-Patterson, 1 year, 23.5c.
Barton, Duer & Koch Company, 6 months, 23.5c.

Blotting, White and Colored

No. 133—3,000 lbs. (any standard stock color), white, buff, and salmon, 19x24—80 flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order, 1,000 lbs.
Dobler & Mudge, 6 months, 12.26c.; 1 year, 12.26c.
Mathers-Lamm Paper Company, 6 months, 12.24c.; 1 year, 12.24c.
R. P. Andrews Paper Company, 6 months, 12.17c.; 1 year, 12.17c.
Barton, Duer & Koch Paper Company, 6 months, 12.25c.; 1 year, 12.25c.
Whitaker Paper Company, 6 months, 10.37c.

Desk Blotting, Colored

No. 134—5,000 lbs., moss green, 19x24—100 flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order, 1,000 lbs.
Dobler & Mudge, 6 months, 9.69c.; 1 year, 9.69c.
Mathers-Lamm Paper Company, 6 months, 9.7c.; 1 year, 9.7c.
R. P. Andrews Paper Company, 6 months, 9.63c.; 1 year, 9.63c.
Barton, Duer & Koch, 6 months, 9.73c.; 1 year, 9.73c.
Whitaker Paper Company, 6 months, 15.37c.

No. 135—5,000 lbs., buff, 19x24—100 flat, in wrapped bundles, with projecting colored-paper marker between each 100 sheets, min. order 1,000 lbs.
Dobler & Mudge, 6 months, 9.19c.; 1 year, 9.19c.
Mathers-Lamm Paper Company, 6 months, 9.19c.; 1 year, 9.19c.
R. P. Andrews Paper Company, 6 months, 9.18c.; 1 year, 9.18c.
Barton, Duer & Koch Paper Company, 6 months, 9.22c.; 1 year, 9.22c.
Whitaker Paper Company, 6 months, 10.37c.

Stereotype Molding, White

No. 136—3,000 lbs., 19x24—50 flat, in wrapped bundles, with projecting colored-paper marker between reams, min order 1,000 lbs.
Dobler & Mudge, 6 months, 11.21c.; 1 year, 11.21c.
Mathers-Lamm Paper Company, 6 months, 11.2c.; 1 year, 11.2c.
R. P. Andrews Paper Company, 6 months, 11.15c.; 1 year, 11.15c.
Barton, Duer & Koch Paper Company, 6 months, 11.20c.; 1 year, 11.20c.

Stereotype Molding, Red

No. 137—2,500 lbs., 19x24—20 flat, in wrapped bundles, with projecting colored-paper marker between reams, min. order 1,000 lbs.
Dobler & Mudge, 6 months, 13.71c.; 1 year, 13.71c.
Mathers-Lamm Paper Company, 6 months, 13.7c.; 1 year, 13.7c.
R. P. Andrews Paper Company, 6 months, 13.64c.; 1 year, 13.64c.
Barton, Duer & Koch Paper Company, 6 months, 13.7c.; 1 year, 13.7c.

Offset, for Web Presses

No. 138—20,000 lbs., 24x36—30; rolls, 39 ins. wide (3-inch cores), min. order 5,000 lbs.
Thomas Barrett & Son, 6 months, 8.0c., on sample, plain offset; 6 months, 9.0c., on oil offset, to be supplied before September 30.
Osburn Paper Company, Inc., 6 months, 7.98c.
R. P. Andrews Paper Company, 6 months, 7.73c.
Old Dominion Paper Company, 6 months, 6.49c.; 1 year, 6.49c.
Whitaker Paper Company, 6 months, 7.72c.; 1 year, 7.72c.

Oiled Manila, Tympan

No. 139—17,000 lbs., 24x36 ins. approximately 86 lb. basis; rolls, 38, 48, and 55 ins. wide; max. 150 lbs.; wound on wooden plugs, 1½-in. hole, min. 5,000 lbs.
Thomas Barrett & Son, 6 months, 9.38c., on sample.
R. P. Andrews Paper Company, 6 months, 9.4c.
Barton, Duer & Koch Paper Company, 6 months, 7.65c.
Charles G. Stott & Co., 6 months, 7.75c., c. l. on sample.
Whitaker Paper Company, 6 months, 8.90c.; 1 year, 8.90c.

Plate Wiping, for Embossing Presses

No. 140—2,500 lbs., 24x36—50; rolls, without breaks or scraps, wound solid at an even tension, 4, 5, 6, 7, and 8 ins. wide, max. diam. 12 ins. wound on wooden plugs, 1½-in. hole.
R. P. Andrews Paper Company, 6 months, 8.75c.; 1 year, 8.75c.
Whitaker Paper Company, 6 months, 8.49c.; 1 year, 8.49c.

Back Lining, for Case-Making Machines

No. 141—6,000 lbs., 24x36—90; rolls, 24 ins. wide, wound on wooden plugs, 1½-in. hole, min. order 2,000 lbs.
Osburn Paper Company, Inc., 6 months, 7c.; 1 year, 6.75c.
Barton, Duer & Koch Paper Company, 6 months, 3.99c.
Old Dominion Paper Company, 6 months, 4.99c.
Whitaker Paper Company, 6 months, 4.20c.; 1 year, 4.20c.

Pressboard, Red

No. 142—2,000 lbs., 24x32; approximately 75 lbs. to 144 sheets flat, min. order 1,000 lbs.
R. P. Andrews Paper Company, 6 months, 14.2c.; 1 year, 15.2c.
Whitaker Paper Company, 6 months, 17.5c.; 1 year, 17.5c.

Pressboard, Gray

No. 143—25,000 lbs., 30x36; approximately 230 lbs. to 144 sheets flat, min. order 5,000 lbs.
R. P. Andrews Paper Company, 6 months, 14.7c.; 1 year, 15.7c.
Old Dominion Paper Company, 6 months, 13.97c.; 1 year, 13.97c.
Whitaker Paper Company, 6 months, 18.5c.; 1 year, 18.5c.

Binders Board

No. 144—500 lbs., News Board, 26x38—Nos. 100 and 120. (To be trimmed square on four sides.) Min. order, 500 lbs.
No bids.

No. 145—650,000 lbs., Chip or Straw Board, 26x38—No. 50, cut 21½x32½, 26x38, and 28½x34½ ins.
Robert Gair Company, Brooklyn, N. Y., 6 months, 2.5c.
R. P. Andrews Paper Company, 6 months, 2.5c., 1 year, 2.5c.
Barton, Duer & Koch Paper Company, 6 months, 2.72c.; 1 year, 2.72c.
Old Dominion Paper Company, 6 months, 2.832c.
Whitaker Paper Company, 6 months, 2.71c.; 1 year, 2.71c.

No. 146—40,000 lbs., Strawboard, 26x38—No. 50, cut 21½x32½, 26x38, and 28½x34½ ins.
R. P. Andrews Paper Company, 6 months, 2.235c.; 1 year, 2.235c.

No. 146a—(Car lots).
R. P. Andrews Paper Company, 6 months, 2.235c.; 1 year, 2.235c.

No. 146b—(Less than car lots).
R. P. Andrews Paper Company, 6 months, 2.735c.; 1 year, 2.735c.

No. 147—10,000 lbs., Strawboard, lined, 26x38—No. 50.
No bids.

(*Continued on page 66*)

CANADIAN PULP AND PAPER MEN MEET

Large Gathering of Representative Men in the Industry Attracted to Montreal by Annual Meeting of the Canadian Pulp and Paper Association—George Carruthers, President of Interlake Tissue Mills, to Head Association for Ensuing Year—Technical Section and News Print Service Bureau Hold Important and Interesting Meetings.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 26, 1924.—The annual meeting of the Canadian Pulp and Paper Association and of allied organizations, held in Montreal this week, brought to the city probably the largest gathering of experts in the pulp and paper industry and in forestry ever held here, and lectures, addresses, luncheons and banquets have been going on during the whole week.

The principal meeting was, of course, that of the Canadian Pulp and Paper Association, which was formally opened on Friday and at which George Carruthers, of Toronto, was elected president to succeed H. F. E. Kent. This meeting was preceded earlier in the week by meetings of various sections of the association at which technical papers were read by experts.

On the whole, a very favorable year's business was reported by the chairmen of these sections when they appeared before the annual general meeting. The business in news print has been particularly good, all the mills working to capacity, with future orders for their product well ahead. In regard to book and writing papers, kraft, sulphite pulp and groundwood pulp, it was reported that competition from Europe was more or less serious and the general tenor of the reports was that difficult times were ahead, as the capacity of the various mills was in excess of the domestic consumption and markets must be found abroad in the face of severe competition.

One of the most interesting addresses at the annual meeting of the Technical Section was that of George Chahoon, President of the Laurentide Company, Limited, on "The Place of the Technical Man in the Paper Industry." He took the ground that ability to organize and handle men was in fact more important than how to control materials. He said that if the purely practical man confined his scope of activities to those of the scientist and specialist, the purely practical man would push ahead of him. Sir William Price, however, claimed that he was out and out for the technical man. "'Technical men' with common sense and vision," he said, "are going to be the men of the future. Practical men," he added, "were limited by the lack of education in possession of the technical man."

Sir Lomer Gouin, ex-Minister of Justice for Canada, and former Premier of the Province of Quebec, gave an address before the Canadian Forestry Association, in which he dealt with the embargo on pulpwood cut on Crown lands, a policy which he originated when Premier of Quebec. He said: "In 1910 we inaugurated a policy in the province of Quebec by which we prohibited the exportation of pulpwood on Crown lands. The other provinces followed, and the result is the following: In 1910 there were three paper mills in Canada, all fighting for existence. They produced in the same year 700,000 tons of manufactured pulp and paper. In 1922, 3,500,000 tons were produced. In 1910 Canadian mills consumed 600,000 cords of pulpwood; in 1922, they consumed 3,000,000 cords. This policy which has brought such very profitable results has contributed to produce equilibrium in financing; surpluses; subsidies to education; construction of roads, and helps to colonization and agriculture. We are told that one cord of pulpwood exported brings back to the cutter of the timber $6, while the same cord of pulpwood manufactured in Canada brings to us $60. We read that in 1923 we exported 1,500,000 cords of pulpwood valued at $13,500,000. If we had kept that pulpwood with us and manufactured it in our own mills, as we could, we would have received $67,000,000."

Discussing the proposed embargo by the Federal Government on pulpwood cut on freehold lands, Sir Homer expressed himself as in favor of it in a general way but stated the Government had done the right thing in appointing a Royal Commission before action was taken. He was in favor of keeping Canada's resources of raw material within the country. "I am sure that we will show ourselves just as wise as our good neighbors who have thought it best that they should stop the cutting of their own timber to come into Canada and get as much as they can out of it. If our good neighbors were in our position, I am sure that they would not wait until these resources were exhausted before prohibiting the export of pulpwood." However, he remarked that justice must be done to the farmer in ensuring that he had a good market for pulpwood cut on his farm, and in this connection he suggested that if an embargo were imposed, there should be some method by which the farmer should be guaranteed the prevailing prices for pulpwood in the American market.

Percy B. Wilson, of Sault Ste. Marie, was elected the new president of the Canadian Foresty Association.

F. J. D. Barnjum on Pulpwood

Frank J. D. Barnjum, who has been carrying on an active campaign in favor of an absolute embargo on pulpwood, gave his second annual dinner to the Canadian Society of Forest Engineers at the Ritz Carlton Hotel and in an address to a large company stated that instead of pleading with the Government to adopt the embargo, he now dared any government, whatever its politics, not to prohibit the export of raw wood from Canada. He said he had personally investigated all the forest areas in Canada and he could convince any unbiased body of men that Canada's available wood supply would become exhausted within a period of less than ten years unless drastic or immediate measures were taken to prevent such a calamity.

Speakers at Annual Luncheon

The principal speakers at the annual luncheon of the Pulp and Paper Association were the Hon. James Lyons, Minister of Mines and Forests for Ontario, and C. Howard Smith, president of the Manufacturers' Association. Both spoke in favor of the embargo on pulpwood. Mr. Lyons stated he considered the embargo necessary in order to ensure a continuous supply of raw material for the pulp and paper industry in Canada, while Howard Smith qualified his endorsation of the embargo by saying that if for some reason or other such an embargo was considered impracticable, Canada's vast pulpwood resources should at least be used as a bargaining proposition for tariff concessions in the entering into the United States of finished Canadian products.

President's Address

H. F. E. Kent, president of the association, in opening the meeting, gave a brief and business-like review of conditions in the industry during the past year. He said:

Speaking in a broad and somewhat general sense, I think we may congratulate ourselves that our industry, for the most part, has come through the preceding twelve months satisfactorily and that it is today in a reasonably healthy condition. This applies particularly to those branches producing news print, wrapping and fine papers. The Mechanical Pulp Section has also enjoyed a fairly good year. Some of the other branches, notably those engaged in producing chemical pulp, kraft wrapping, book paper and boards, have less reason to be satisfied. The markets for these products are in an unsettled condition; chiefly due to European competition, whose

strength continues to lie in lower production costs and the advantage afforded to them in a selling market by their depreciated exchanges. The situation is a serious one and should occasion much concern. Some of these branches of our industry are having a very difficult time, even some of first-class importance and with the most modern equipment. Over-expansion of the industry is assigned by some authorities as the underlying cause, but since the prosperity of these companies depends very largely upon their ability to find a foreign market for their products and not upon the domestic demand, the real cause is probably to be found in their inability under present conditions, to compete in the world's markets.

Taxation and Transportation Burdens

Reference has already been made to the advantages enjoyed by European producers. It cannot be denied that lower production costs—based largely upon cheap labor and depreciated exchanges—enable them to undersell their American and Canadian competitors. Our industry in common with other Canadian industries is suffering from excessive taxation, which brings in its train a long line of minor ills and, in the last analysis, is responsible for our higher production costs. Abnormal transportation rates furnish another contributing cause along with high labor costs, but these latter, in turn, can be traced, together with the high cost of living in Canada, to excessive taxation, and no real improvement can be looked for until taxes begin to descend. It is to be hoped that time will bring an amelioration of these onerous conditions.

Tariff changes made by the Dominion Government since coming into power have not helped us but, on the contrary, have opened the doors to increased imports of British papers. The tendency towards a lower tariff displayed by the present government and its immediate predecessors bodes no good to those branches of our industry dependent on the domestic market and we should do everything possible to discourage them.

Despite our several efforts we are still practically debarred from the Australian market on account of the exceedingly high preference tariff accorded by Australia to the British paper manufacturers. The effect of this is seen in the fact that our exports of news print to that country have declined from 39,000 tons in 1920 to 6,525 tons in 1923.

Our Government assures us that it is still hopeful of securing a better trade agreement with Australia and that negotiations to that end are pending.

Exportation of Pulp Wood

The question as to whether the time has not arrived for the Dominion of Canada to extend the regulation now applying to pulpwood cut on the Crown lands of the four Eastern Provinces, requiring such wood to be put through at least one process of manufacture before being exported, to pulpwood of all descriptions, has received a great deal of public attention during the year. It is one of vital importance to our industry. The Government, evidently convinced that such a course was desirable, sought and obtained from Parliament at its last session, sanction to inaugurate the policy proposed. Before invoking the power thus given, however, the Government appointed a Royal Commission to investigate the subject and make recommendations. Unfortunately, perhaps, for the prospect of any immediate benefit from the commission's work, the Government by passing an interim Order-in-Council exempting for ten years wood sold for export under contract, and by giving a verbal pledge to exempt wood cut from farm lands, seems to have left itself without the means to check the practice complained of, even should the commission report in favor of so doing.

Our association, acting through its executive council, laid before the commission a statement embracing the general views of our members, in which the desirability as well as the extreme necessity of husbanding our pulpwood resources was argued. In this statement emphasis is laid on the fact that while our raw material in the shape of pulpwood is at present freely available to our American competitors we are deprived of the American market for many of its finished products. We have argued the view that if exportation of pulpwood is to be permitted to go on as at present, a fair quid pro quo would be the granting of free entry to the American market for Canadian paperboards, wrapping and book papers, and we commend that suggestion to the authorities at Ottawa.

Industrial Research

In conformity with instructions given at the last annual meeting the association was represented at the National Conference on Industrial Research, held in Ottawa under the auspices of the Canadian Manufacturers' Association in April last by the president, the chairman of our Technical Section and the secretary. The conference was attended by representatives of all Canada's leading industries and a definite impulse was given to the cause of industrial and scientific research for Canada. A program was laid before the Government and was sympathetically received.

Our own committee on Industrial Research has continued its efforts during the year and will come before you with a report containing some practical suggestions growing out of their deliberations and investigations.

The Empire Forestry Conference

The association was represented at the Empire Forestry Conference, held in Canada last summer, by Mr. Ellwood Wilson, chairman of the Woodlands Section, and the secretary. The conference was attended by representatives from all parts of the British Empire and the interchange of information and of opinions could not help but be of benefit to all concerned. In their tour through the different provinces, the delegates took occasion to inspect some of the larger pulp and paper plants and were hospitably received by our members.

The British Empire Exhibition

The Executive Council authorized the expenditure of $2,500 for space in the Canadian Pavilion at the British Empire Exhibition in London next year in which to display an exhibit representing our industry. The council also authorized the engagement of J. N. Stephenson, editor of the *Pulp and Paper Magazine*, to supervise the arrangements for the exhibit and to attend the exhibition on behalf of the industry. A sufficient number of our members have agreed to sub-lease space and supply exhibits to ensure the success of the enterprise.

Industrial Education

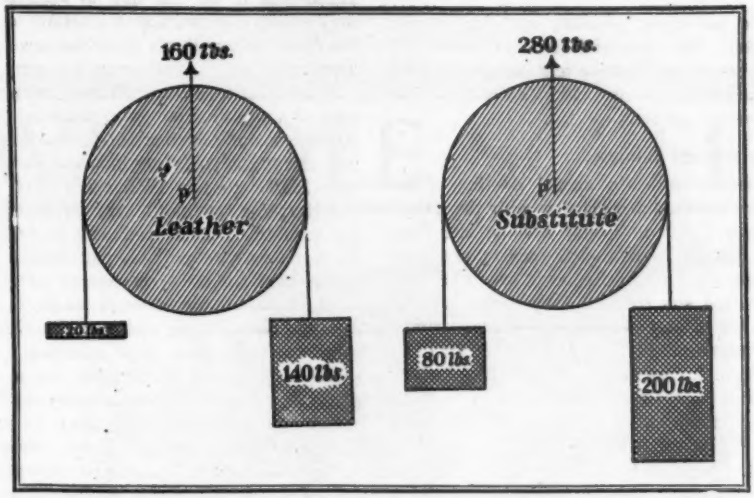
Marked advance has been made during the year in connection with the several plans for extending vocational education to the young men engaged in pulp and paper mills.

The Textbook Committee has succeeded in getting Volume IV of the series of Textbooks on Papermaking from the press and has the fifth and final volume well under way.

The Correspondence Course, based on the textbooks and carried on by the Institute of Domestic Arts and Science has made progress and now has more than 400 students enrolled.

The Quebec Government has initiated its Papermaking School at Three Rivers under what seems to be quite favorable auspices. The plans for this school were submitted, in advance, to our Executive Council and were duly approved. The council also appointed a number of representatives of the association as an advisory board to assist the faculty of the school.

In conclusion I would say that while the foregoing summarizes the main activities of the association during the year, there have been numerous minor ones which it is thought not necessary to enumerate here. The Executive Council has held four meetings. The membership has been increased by three during the year. Most of the sections, as you will see by the reports submitted, have



A leather belt requires less tension—consequently operates more efficiently—than a substitute belt

"SEEING" is often "deceiving" in the matter of power transmission. To all outward appearance, a substitute belt may turn pulleys and transmit power (within certain limits) as well as an honest leather belt.

But if you measured the actual power loss and wear and tear on the machinery, there would be a very different story to tell.

A simple illustration will explain

Suppose P to be a pulley operated by a leather belt with 120 lbs. effective pull on the driving side. The average tension ratio between the slack and driving sides of a good leather belt is one to seven. This would mean 140 lbs. tension on the driving side and 20 lbs. on the slack side. The sum of these two tensions represents a strain, or load on the pulley, shafting and machinery of 160 lbs.

Now, suppose P^1 to be the same pulley, operating under the same conditions with a good substitute belt. The average tension ratio between the driving side and the slack side is 2.5 to 1. This would mean that the driving side would have a tension of 200 lbs. and the slack side 80 lbs. The difference between the two, 120 lbs., shows the same effective pull as the leather belt. But the sum, 280 lbs., represents a load or strain almost twice as great on the pulley, shafting and machinery.

This is where the substitute belt actually costs you money. It must be put on the pulleys at a far greater tension in order to deliver the same effective power as leather. This greater tension means *loss of power; increased wear and tear on bearings, shafting and machinery; and a lower operating efficiency.*

Because of these facts it has been said that "if substitute belts were free, it would still pay a manufacturer to buy honest leather belts." They last many years longer—deliver more power—have a salvage value which substitutes have not—and are more adaptable and more dependable.

Write for booklets

Our booklets on Power Transmission will tell you the kind of belts which save money in service every day. They contain invaluable data that is pertinent to your plant. They combine the results of the most intensive research work ever done on belting and power transmission. Mail us the coupon for them—FREE.

Address—Research Division

THE LEATHER BELTING EXCHANGE, Forrest Building, Philadelphia

The Leather Belting Exchange is not a company operating for a profit or for selling belts. It was organized by the leading leather belting manufacturers of America in the desire to furnish impartial information on leather belting to manufacturers, engineers, and technical schools. It maintains a competent staff of experts in Philadelphia and at Cornell University who will gladly answer questions on power transmission without cost or obligation. In the broader interest of leather, it is affiliated with the leading Sole and Belting Leather Tanners in their nation-wide campaign on leather and the tanning industry. For information regarding leather, itself, address

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Please send me your 6 booklets on power transmission—FREE. Also, without obligation, place me on your mailing list for subsequent information developed by your research work on belting.

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functioned in their customary manner, and the association, as such, can look back upon the year's accomplishments with entire satisfaction.

As to the future, there are many problems awaiting solution and much work to be done, the successful issue of which will be determined by the measure of co-operation and support accorded by the members to the executives entrusted with the responsibility of carrying on the association's affairs.

The Annual Banquet

The gatherings in connection with the annual meeting of the Canadian Pulp and Paper Association concluded with the annual banquet in the Ritz Carlton Hotel on Friday evening and there was a record attendance. H. F. E. Kent, the retiring president, was in the chair. George Carruthers, the new president, was introduced to the members, and was received with cheers. At the head table were the entire list of past presidents of the association, these being Carl Riordon, president, 1913-14; I. H. Weldon, J. H. A. Acer, C. Howard Smith, F. J. Campbell, J. A. Bothwell, George Chahoon, Jr., P. B. Wilson, and George M. McKee. Others present included the Hon. James Lyon, Minister of Mines and Forests for Ontario, Hugh P. Baker, and Frank W. Clarke.

The Hon. Thomas A. Low, Minister of Trade and Commerce for the Dominion, was the principal speaker. In the course of his address, Mr. Low said that last year many new news print machines were installed and it would seem a safe prediction to make that in 1924 Canada will pass the United States figure, and take her place as the greatest news print producer in the world. News print, said the minister, now includes 80 per cent of Canada's total paper production, and the amount produced in 1922 was a 34 per cent increase over 1921. Exports in news print for 1923 totaled 959,514 tons, valued at $68,362,817, an increase of 250,000 tons over 1921. Frequent bursts of applause went up from the gathering as the Hon. Mr. Low cited the milestones in the evolution of the pulp and paper industry in the Dominion. He went on to praise the embargo on pulpwood cut on Crown lands, saying that this was in part responsible for the tremendous development of the pulp and paper manufacture in this country. He made a guarded reference to the proposed embargo on pulpwood cut on freehold lands, saying in this connection: "Canada is a young country of small population and vast resources. In the development of these, she must guarantee that it is development and not exploitation, conservation and not absolute depletion, that takes place. In nothing is there greater danger of a policy, intent on rapid development, being ultimately short-sighted and devastating than in the field of timber resources. Co-operation between Canada and the United States will preserve reserves for all."

The Rev. Dr. Nehemiah Boynton, chaplain of the American Pulp and Paper Association, followed with a witty address.

Newsprint Service Bureau's Annual Meeting

The annual meeting of the News Print Service Bureau was held in Montreal on Friday last. R. S. Kellogg, the secretary, reported that the production of news print in North America established a new record in 1923, the total for the United States and Canada surpassing by 218,000 tons, or nearly 9 per cent the previous high mark of 2,530,000 tons in 1922.

The United States mills produced 1,485,000 tons of news print, or 37,000 tons more than in 1922, and also more than any previous year, except 1920, when the total was 1,512,000 tons. In 1920, however, the output of the regular news print mills in the United States was supplemented by perhaps 80,000 tons from the so-called marginal mills, which have not contributed so heavily to the news print supply since that time of abnormally high prices.

The rapid development of news print manufacture in Canada is strikingly shown by the fact that the output last year was 1,263,000 tons, or 181,000 tons more than in 1922, and 455,000 tons, or 56 per cent more than in 1921.

In addition to these totals for the United States and Canada, 64,000 tons of news print was produced in Newfoundland, and 12,000 tons in the one mill in Mexico, which makes news print, thus giving a production of 2,824,000 tons for the North American Continent, or two-thirds of all the news print paper produced in the world.

In addition to this record-breaking production, with over 80 per cent of Canada's news print marketed in the United States, some 200,000 tons of Scandinavian, German and Finnish news print paper was sent to the publishers in Uncle Sam's domain in 1923, compared with 133,000 tons in 1922, and 135,000 tons in 1921.

Advertising, as usual, was an important factor in determining the quantity of news print used in 1923, but influential also were the large sizes of the daily and Sunday issues.

The total volume of newspaper advertising in the leading cities of the United States showed an increase in 1923 over 1922 of 7 per cent, and of 2 per cent over the 1920 record figure. The large volume of advertising, both periodical and newspaper, planned for and to be expected during 1924 was a matter of common knowledge. It looks as if the time were not far distant when the total yearly expenditure for advertising by means of the printed page in North America would be one billion dollars.

Paper manufacturing in North America was a billion and a half dollar industry with the production of news print making up a very respectable proportion of the total investment and further notable developments under way. There were ten new machines with a total daily capacity of 670 tons, which came into production in 1923, and four more of 385 tons capacity are scheduled for this month. The North American news print mills now have a rated capacity of 10,000 tons daily with further substantial additions under way for the latter part of the year, and for 1925, so that there should be no need for any newspaper publisher to go abroad for his supply of white paper.

All officers of the News Print Service Bureau were re-elected for another term. They are: President, George M. McKee, Algonquin Paper Company, Ogdensburg, N. Y.; vice-president, Louis Bloch, Crown-Willamette Paper Company, San Francisco, Cal.; secretary-treasurer, R. S. Kellogg, of New York; executive committee, Percy B. Wilson, Spanish River Pulp and Paper Mills, Sault Ste. Marie; W. E. Haskell, International Paper Company, New York, and J. L. Apedaile, Price Brothers & Co., Limited, Quebec.

S. P. Richards Co. 75 Years Old

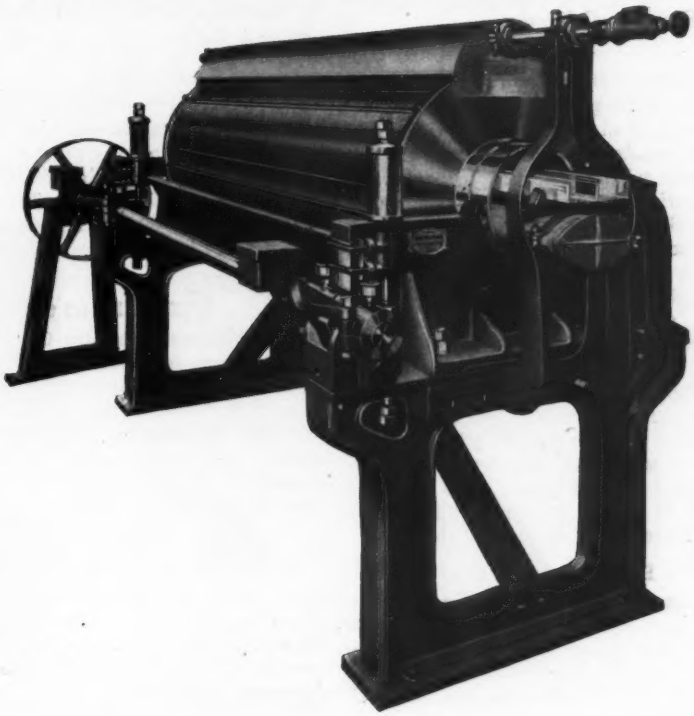
ATLANTA, Ga., January 28, 1924.—The S. P. Richards Company of Atlanta, wholesale paper merchants, is celebrating this year the diamond anniversary of its business career. Few are the paper houses that can claim a record of seventy-five years of continuous service under one management of father and sons.

The business was founded in 1848 in Macon, Ga., by Samuel P. Richards, but in 1861 was moved to Atlanta. S. P. Richards remained actively in the business until he reached an advanced age, and it was not until 1894 that it was turned over to his two sons, Russell and Walter Richards, the present owners and managers. At that time they had very little in the way of assets, except the priceless heritage of the long and unblemished career of their honored father.

The business has grown by leaps and bounds, until today it is one of the largest paper concerns in the entire South, occupying its own plant especially erected and equipped to render every possible service to the printer and publisher. Satisfied customers are numbered by the thousands all over the South.

The company today has many valued assets in the way of exclusive agencies and mill connections, which give it the very choicest of well known brands of papers for the printer. However, it feels that the most estimable asset it can ever possess is its long and continuous record of honesty and fair dealing.

WALPOLE SCREEN



A few of the many mills using Walpole Screens are:

American Writing Paper Co.
Holyoke, Mass.

Hawthorne Paper Company
Kalamazoo, Mich.

Thomas Phillips Company
Akron, Ohio

Hartford City Paper Co.
Hartford City, Ind.

Coy Paper Company
West Claremont, N. H.

Port Huron Sulphite & Paper Co.
Port Huron, Mich.

Valve Bag Co. of America, Inc.
Oakmount, Pa.

SCREENS LONG STOCK

If you make paper from long fibred, slow working stock—

If your production is handicapped by breaks due to lumps and slime spots or by shutdowns for washing and raking screen plates—

Write for the Walpole Screen Catalog.

The Walpole Screen overcomes these difficulties. The stock is uniformly clean. Production can be continuous.

BIRD MACHINE COMPANY

South Walpole, Massachusetts

Western Representative
T. H. Savery, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Ltd.,
260 St. James Street
Montreal, Canada

6228

CHICAGO TRADE LOOKS FOR EARLY BUSINESS ACTIVITY

January Conditions Apparently Indicate Pronounced Improvement—La Salle Paper Co. Constructing New and Modern Building—Mill Superintendents' Association to Hold Annual Convention at Dayton, Ohio, in May—Western Paper Stock Co. Visited by $100,000 Fire—Moser Paper Co. Adds Two New Men to Sales Force—E. E. Eiffert to Reside in California.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, January 28, 1924.—Although the Chicago paper market as a whole does not measure up to all the expectations which were held out for it, according to members of the trade here, the first weeks of 1924 have given some evidence that there is every reason to look forward to a long period of active business. The market for coated and uncoated book papers, it is stated by one firm's representative, has not been so good, so far as they are concerned.

There has been no marked changes in the costs of writings and bonds of the medium and higher grades. The market on writings of the medium and higher grades has been fairly firm. It is expected to remain so for some time and if anything will go lower.

The demand for vegetable parchment has reached the active stage and some of the mills are anywhere from six to eight weeks behind on deliveries. In some lines the market shows signs of stiffening.

Of the various lines of paper products registering improvements in the market, roofing stock takes the lead. The demand continues getting stronger each week and prices gradually climb to higher levels. This time there is a $3 increase bringing No. 1 stock up to $40, No. 2 up to $38, No. 3 and No. 4 up to $36 each.

La Salle Paper Co. Builds New Structure

Another Chicago paper house is following the example set by others.. The La Salle Paper Company, which is now located on the ground floor at 171 N. Dearborn Street, is constructing a new and modern building at the southeast corner of Adams and Peoria Streets to which it will move its office, combining it with the warehouse at that place. The building is to be entirely of concrete fire-proof construction and will be ready for occupancy about May 1.

Western Paper Stock Has Disastrous Fire

A disastrous fire broke out in the plant of the Western Paper Stock Company, at 1450-52 S. Indiana Avenue, on Tuesday, January 22, and swept through the top three floors causing a damage which was estimated by the fire chief as approximately $100,000. A match mixed with a collection of waste paper is supposed to have started the fire. It spread with a roar from the third floor to the roof. After half an hour of fighting, the firemen thought they had the fire under control, when the wind found a draught through broken windows and in an instant sent the flames crackling through the roof.

Business is being conducted by the Western Paper Stock Company, of which M. M. Follansbee is secretary and treasurer. He has not yet announced his plans for the future.

Sefton Co. Maintains Excellent Display

A real display of containers manufactured by the Sefton Manufacturing Company in its Chicago office is a constant advertisement of the products of this firm to everyone who enters.

It is in the form of a large display case stationed on the left-hand side of the entrance on the 19th floor of the Mallers Building. This case is all of plate glass, has a wide base and tapers on the front side only toward the top much like a confectioner's show case. Including the base, this case has four shelves on each of which containers are presented to the public as they appear when ready to receive the contents they are destined to carry. These containers vary in size from the smallest of the lot which should contain peanuts, to the largest, the outside surface of which announces that it is capable of holding twelve dozen jars of a patent medicine.

Superintendents' Convention Dates Set

It has been definitely established that the annual convention of the American Pulp and Paper Mill Superintendents' Association will be held on May 22, 23 and 24 at Dayton, Ohio. The entire program has not yet been completed but Secretary-Treasurer Peter J. Massey, of the W. F. Hall Printing Company, Chicago, is working on it and he says that it will be ready for publication within a few weeks.

Moser Takes on Two New Salesmen

Two well-known salesmen in this territory joined the sales force of the Moser Paper Company, of Chicago last week. One is J. W. Tomassene, formerly connected with the Seaman Paper Company in the sales department. The other is Robert King, who was with the United States Envelope Company for some time. Both men are well liked and should make records for Moser in their new connections.

E. E. Eiffert to Stay in California

It is with regret that the Chicago paper industry learned that E. E. Eiffert, for many years with the Bradner Smith Paper Company, Chicago, and of late a member of the selling organization of the Moser Paper Company, will locate permanently in California, for they have come to consider Mr. Eiffert as an important factor in this market. He was called to California recently through the illness of relatives and the surroundings have so pleased him that he will stay there.

Visitors of the Past Week

Some of the business callers in the Windy City last week from other places are men well-known to the trade throughout the country. They were: Percy Truitt, of the Missouri-Interstate Paper Company, of Kansas City, Mo.; H. W. Suter, assistant sales manager and W. D. Randall, vice president of the Champion Coated Paper Company, Hamilton, Ohio; George Eastwood, Parsons Paper Company, Holyoke, Mass.; Mr. Casey, Chemical Manufacturing Company, Holyoke, Mass.; Alec Gilman, Allied Paper Mills, Kalamazoo, Mich.; Mr. Montague, Standard Paper Manufacturing Company, Richmond, Va.; Mr. Murray, Appleton Coated Paper Company, Appleton, Wis.; R. E. Pahl, Peerless Paper Company, Dayton, Ohio; Arthur Hill, Crocker-McIlwain Company, Holyoke, Mass., and Joe Pirie, Neenah Paper Company, Neenah, Wis.

New York Paper Salesmen to Meet

The New York Division of the Salesmen's Association of the Paper Industry has decided to hold a special executive luncheon, Wednesday, February 20, which will take the place of the usual Monday luncheon for that week. Members from all parts of the country are invited.

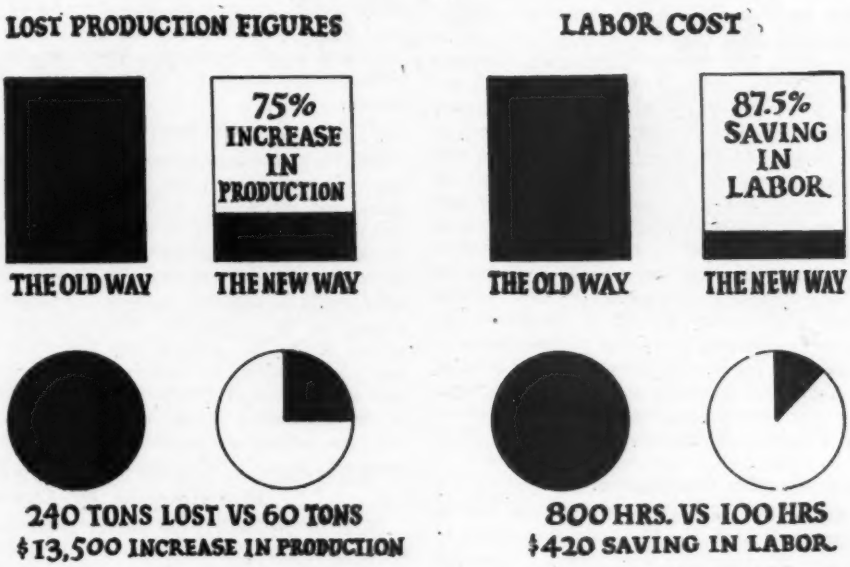
Vice President Ewing for the New York Division named the following committee to begin plans at once for the annual convention on April 8, 1924:

F. N. Countiss, Chairman; R. K. Baker; E. C. Chadwick; W. F. Heath; G. A. Keeney, Jr.; E. G. Lloyd; J. W. Quimby; Chester M. Robbins; G. M. Wetmore; R. D. W. Ewing, ex-officio; J. L. Fearing, ex-officio. In addition, the following were named on the committee from other divisions: G. K. Gibson, Chicago; Robert T. Houk, Jr., Ohio; F. W. Main, New England; D. H. Ross, Kalamazoo. The committee will meet within a week to begin its work.

BELOIT REMOVABLE FOURDRINIER [patented]

Here are the Facts

The Old Way vs The New in Changing Wires



$13,920 Added Annual Sales and Savings

The advent of the *Beloit Removable Fourdrinier* marks a distinct advance in the science of paper-making efficiency. By taking the following proved figures in changing wires we get the results noted above:

Four hours required on old type Fourdrinier, less one hour required on "Beloit Removable" means 3 *hours saved* on each wire change.

Twenty wires changed per year means 60 *Production Hours* saved per year, or 180 tons per year. 180 Tons at $75.00 per ton = $13,500.00 *Increased Production.*

Ten men on average required to change wire on old type Fourdrinier, or 40 men hours. Five men only required on "Beloit Removable," or 5 Man-Hours. 25 Man-Hours saved per change—20 Changes—700 Hours—at 60c per hour = $420.00 *Labor Saving.*

The above savings are but a portion of the labor- and time-saving features of the "Beloit Removable." Additional savings are made by the elimination of heavy lifting, and by the fact that breast roll, table and wire rolls and suction boxes are not disturbed. No damage to rolls or bearings is possible. No grease or oil touches the wires. No possibility of crimped wires.

Here indeed is the paper-maker's dream come true. It will pay you to investigate this remarkable invention.

WRITE FOR SPECIAL BULLETIN GIVING COMPLETE FACTS

The "BELOIT WAY" is the Only Way

Beloit Iron Works BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS **Beloit, Wis., U. S. A.**

Established 1858

FAIR DEMAND FOR PAPER IN THE TORONTO MARKET

Although Business Was Somewhat Slower in Opening Up Than Was Expected the General Opinion Is that There Will Be a Steady Improvement in the Demand for Paper from Now On—Toronto Carton Club Discusses Safety Methods at the King Edward Hotel—Interesting Opinions For and Against Embargo on Pulpwood Are Expressed at Commission Hearings.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., January 28, 1924.—January has proved to be a fair month so far as the paper trade is concerned, but business has been a little slower in opening up than was expected. The general opinion is that the tide has turned in the direction of an improvement and that efficiently managed businesses can look forward to the coming year with considerable optimism. The recent cold snap and stormy weather, along with blocked roads, has in a measure kept down buying and the new sales tax is not yet operating smoothly. The coming month should witness a greater degree of confidence and more buying as stocks are running very low and will soon have to be replenished. Mills are operating to fair capacity but are not rushed, and annual meetings are being held and plans developed for the extension of trade during the coming year. While buyers are not ordering as freely as many jobbers would like, the majority of the trade are viewing conditions in a broad perspective and recognize that they are only going through the temporary quietness which usually prevails at this season. In the daily papers there are appearing every day announcements of plans for public works and private enterprises, which are being considered and will in the near future be under way. The paper trade is of the opinion that when the big industries get busy others will follow suit and it looks as if that day is not as far off as many imagine.

Paper Box Men Get Together

An important meeting of the Toronto Carton Club was held at the King Edward Hotel last week at which several members of the Canadian Paper Box Manufacturers were present. "Viewing the year 1924" was one of the features of the gathering, each member giving a two-minute talk on the subject. The prize of a box of cigars for the best talk on the subject was won by Mr. Porter, of the Rudd Paper Box Company, Toronto, while Mr. Green of The Dominion Envelope & Cartons Company was a close second. The meeting dealt with the wording of a card on accidents to be displayed in the factories of the Ontario members. This card reads, in part: "A luxury we cannot afford. Having accidents costs the paper box factories of Ontario approximately $35 a day every day in the year, Sunday included. As nearly all accidents are caused by carelessness, careless employees are a luxury we cannot afford." James A. Northey of the Telfer Paper Box Company, was requested to draft another card announcing that some reward would be given to employees toward encouraging them to avoid accidents. A committee was also appointed to look into the matter of fire insurance rating for paper box factories and report at the next meeting.

Pulpwood Commission Hearings Continue

At the sittings of the Royal Commission on Pulpwood at North Bay, Ont., John McManus, who was in the pulpwood brokerage business in 1921, contended that experience of that year caused him to favor a conditional embargo. He stated that considerable pulpwood was cut for export in 1921 in and around North Bay but that a slump in the American market left it all in the hands of district jobbers, who were forced to accept a low home market price. Mr. McManus declared that, if there was an embargo without price regulation, settlers, farmers, jobbers and contractors would be at the mercy of the home market. He favored a pulpwood embargo with a fixed scale of rates for home consumption, which would keep prices in accord with wide open market prices.

At the hearing in Sault Ste. Marie several witnesses opposed the placing of an embargo on pulpwood. All were in favor of reforestation and some desired to see an embargo put on Christmas trees. A. L. Perkins, of Powassan, who is an extensive dealer, gave some very interesting facts. He was against the embargo on the ground that it would stifle competition and force small jobbers and settlers to accept low prices from big companies. He drew the attention of the commission to the fact that when a Canadian jobber contracted to supply pulpwood to a Canadian mill, his wood is automatically hypothecated to any bank or banks to which the mill may have hypothecated its holdings, even before delivery. An embargo, which would cut off the foreign market, he claimed, would leave the settler and jobber in a serious situation. They would be forced to accept the company's own prices and even then their pulpwood would be liable to seizure in the event of failure of the company. There was little local demand for pulpwood and the jobber depended largely on the United States market.

Let the Wood Go Past Their Doors

Mr. Perkins said the marvel was that Canadian mills let all this pulpwood go past their doors. He could not see why they would not put it into ground wood pulp and dispose of it to Americans. In May, June and July there was no use trying to dispose of pulpwood to Canadian mills as they were well stocked up in these months and the price was fifty cents a cord less than what might be obtained later on. Canadian mills offered $7.00 a cord at certain Ontario shipping points but American mills offered $9.50. Mr. Perkins said that there was a clause in the Bank Act providing for hypothecation of wood consigned to Canadian mills and urged that the commission bring this to the attention of the government, as he contended that it entailed too great a risk upon settlers and jobbers. This risk would become an actual menace in the event of an embargo.

High Honor for Mr. Carruthers

Since the organization of the Canadian Pulp and Paper Association, Toronto has had the honor of providing three presidents for that influential body. These men are I. H. Weldon, president of the Provincial Paper Mills Company, H. F. E. Kent, president of the Kinleith Paper Company, and George Carruthers, president of the Interlake Tissue Mills, Limited, who is the newly elected head of the association. Mr. Carruthers started life as a machinist's apprentice and was for several years connected with the International Correspondence Schools, finally becoming superintendent of agencies for Canada. In 1911 he left the service to organize and build the Interlake Tissue Mills at Thorold. His advance in the industry has been rapid and well deserved and, in the matter of Safety work and Technical Education, he has been most enthusiastic. He has also taken a great interest in the welfare and progress of the blind and other humanitarian movements. Mr. Carruthers will make a live wire president of the Canadian Pulp and Paper Association as he is a tireless worker and, by his genial manner, wins friends on all sides.

Notes and Jottings of the Industry

The Economy Paper Box Company, 126 Wellington street west, Toronto, suffered a rather severe loss from water recently when a blaze broke out in the building which it occupies.

E. S. Munroe, of Wilson, Munroe Company, Toronto, and treasurer of the Canadian Paper Trade Association, left last week for Florida where he will spend the remainder of the winter.

A charter has been granted to the Nipigon Corporation, Limited, with headquarters at Port Arthur. This company has taken over and will operate the pulp mill at Nipigon, Ont.

Famous Products Series No. 10

Valley Iron Works Company Equipment Makes KOTEX

On the market but three years Kotex already has national distribution, as the result of an exceptionally well planned advertising campaign, backed up by a fine product and a reliable concern. The Cellucotton Products Company was told that it would be impossible to market Kotex with national advertising. Their success is emphasized by the carloads of Kotex that are shipped daily. Niagara Beaters and other Valley Iron Works Co. equipment are used in the manufacturing of Kotex.

Valley Iron Works Company

Builders of paper and pulp mill equipment

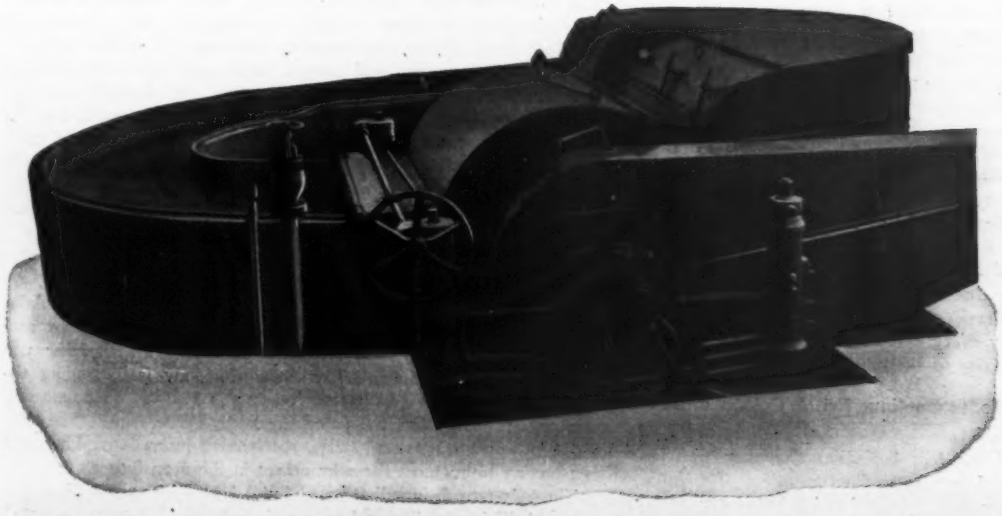
Plant: APPLETON, WIS.

New York Office: 350 MADISON AVE.

Niagara Beaters Cut Costs

1. One Niagara will do the work of two and sometimes three Holland beaters.
2. They require materially less power per ton of stock produced.
3. They save in floor space.
4. Fewer men are required to operate them.
5. They beat more thoroughly and eliminate all dead spots.
6. They save in power equipment, belting and installation costs.

Full information regarding Niagara beaters will be furnished on request. Write for a booklet.



PHILADELPHIA FINE PAPER SITUATION MUCH IMPROVED

Distributors Now Realizing Their Early January Hopes and Buying Under Stabilized Prices Indicates Spirit of Real Confidence—Coarse Paper Market Benefits Slightly but Conditions Are Not as Favorable as in Fine Paper Line—Paper House Employees Enjoy Movie Showing Processes of Paper Manufacture—Personal Notes and Jottings of the Trade In and About Philadelphia.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., January 29, 1924.—Every promise made to the fine paper distributors early in January has now been redeemed and the week closed highly satisfactory to all, buying under stabilized prices being liberal and of a character indicating that real confidence exists as to the industrial and economic future. Printers and publishers, largest patrons of the fine paper dealers, whose business has been sluggish for months, enjoyed during the first month of the year a very decided increase in activity consequent on the liberation of printing orders long held in abeyance and the effect on the trade was, of course, immediate.

The coarse paper market benefited slightly during the week but conditions in it are by no means comparable to those in the fine paper. Conditions extraneous to the American market really are responsible. Prices dropped and this had an unfavorable effect on other grades of coarse paper. Finally the absence among the coarse paper distributors of that spirit of co-operation so evident in the fine paper trade has resulted in a very unsatisfactory status in the coarse paper field. There is a fair demand for other grades than Kraft. In the paper stock market there was enjoyed a slight improvement in mill ordering but not a very substantial one. Prices generally are quiet and unchanged but weak.

Paper House Has Film Show

A decided novelty in trade circles was experienced during the week when the executive offices of Riegel & Co. were converted temporarily into a moving picture auditorium. At 4 o'clock in the afternoon the shades were drawn, the lights turned out, and to an audience of 200 made up of all the employees of Riegel & Co. and many of the Garrett-Buchanan Company, representatives of the American Writing Paper Company exhibited its film entitled "Benton's Trip Through An Eagle A Paper Mill." This film, new to the trade and which is to be given a showing throughout the country was brought here from Baltimore the night before after its exhibition at one of the prominent cafeterias in the Oriole City, by L. B. Springsteen, traveling representative of the American Writing Paper Company, and he, together with the local representatives, Frederick W. Hastings, Hayward Beatty, and Miss Curley, gave running comments which made more vivid the film showing. Benton is a typical business executive "unexpectedly thrust into a bad predicament through the unwitting choice of paper." An interesting little story is presented of just what this predicament was, and of his determination personally to visit the American Writing Paper Company's plant. The film shows his arrival, the meeting with President S. L. Willson, gives views of the Holyoke Dam and finally every detail of paper manufacture from the beginning to the shipping of the finished product.

Thomas W. Price Co. to Continue Dill & Collins Lines

The item in the PAPER TRADE JOURNAL last week regarding the new distribution plan of the Dill & Collins Company was inaccurate in some respects and open to misinterpretation. The following announcement makes plain the position in the matter of The Thomas W. Price Company:

"Following the announcement of Dill & Collins Company, of this city, taking effect February 1, we desire to say: Covering the entire business career of Dill & Collins Company, and before they succeeded the late Alexander Balfour to their present business, we have been handling a portion of the product of paper manufactured at their Delaware mill. In view of the fact, Dill & Collins Company have distributed directly somewhat of their product from their warehouse, 140 N. Sixth street, where they carried a large stock of paper of their manufacture, we did not find it necessary for us to carry in our warehouse a large quantity and assortment of the various lines of paper manufactured by them. What we did not have in our warehouse, we could quickly draw from Dill & Collins Company's warehouse, in view of our close proximity to each other, and thus causing very little delay in filling orders. This arrangement has been entirely satisfactory.

"Dill & Collins Company have decided to discontinue that part of their business, i.e., distributors of the paper they manufacture to the general printing trade, handling their product from their mill, and therefore discontinuing their warehouse at 140 North Sixth street, this city. This makes it necessary for us to stock paper manufactured by Dill & Collins Company in our warehouse for which ample preparations are now being made. The stock is being hauled into our warehouse almost daily. We anticipate no delay in filling orders. As a matter of fact, much better service can be given by us in filling orders from paper made by Dill & Collins Company than ever before.

"Our business now, through the favorable consideration of our friends the printers, publishers and lithographers, has assumed large proportions in sales of Dill & Collins Company papers. This new method taken by Dill & Collins Company, for marketing their goods in this territory, through ourselves and one other reputable distributing house in this city, will, we are sure, work out very well and satisfactorily.

"We invite your inquiries for any special making orders you may contemplate placing for papers of Dill & Collins Company manufacture. There will be one uniform price based on quantity of paper desired, both from stock items and special making orders. We desire to earnestly express our appreciation to the printing, publishing and lithographic trades for their generous favors to us in the past and assure you of our pleasure in looking forward to your increased consideration which we trust we shall merit."

Business Notes of Interest

In the matter of the financial embarrassment of the Bridge Paper Company, the Court during the week appointed Nathan D. Isen of the Enterprise Paper Company receiver, fixing his bond at $2,000.

Preparation of a line of papers adapted for box covering and confectioners' use is now engaging the attention of the John M. Driver Company, 55th and Hunter streets and these will be ready for distribution during the coming month. A single Easter pattern of wrapping and glassine papers is being featured, the line being similar to that manufactured during the Holidays for Christmas designs in like products. The Driver Company has recently added much new equipment to the printing department including special dies and its own patented mechanical presses for the manufacture of these papers.

The Fischer Paper Company, 116 N. 2nd street, have opened a toy and novelty store on Market street near 18th.

Two new salesmen have been added to the forces of the Atlas Paper Company, 128 Vine street. D. Shur, one of the new men has been assigned to the Kensington district, while B. Deer will cover south Philadelphia. The Atlas Company is expanding the line of papers carried, having recently added the Hammermill Seneca wrappings and a line of Charlotte Russe cups. The firm deals in coarse papers and twine, specializing in crepe napkins, and is planning to augment these by others in the near future.

There is now being distributed by Albert Eichhorn & Son, the patented Eichhorn display box and invisible self-fastener, adapted

(*Continued on page 42*)

Established 1886

G.W.P.

If you contemplate buying GROUND WOOD PULP you will do well to get our offer before placing your business. We are in a position to make a very interesting proposition for prompt shipment or for contract over the balance of the year.

M. GOTTESMAN & COMPANY

—INCORPORATED—

18 East 41st Street
New York, N. Y.
U. S. A.

European Offices:
Stureplan 13,
Stockholm, Sweden

New York Trade Jottings

The Continental Paper and Bag Mills, Inc., of 16 East 40th street, will move the latter part of February to a suite of offices in the Pershing Square Building.

* * *

The Scandinavian Pulp Agency, J. A. Millar, vice president and general manager, importer and dealer in wood pulp, 342 Madison avenue, has been elected to membership in the New York Merchants' Association.

* * *

According to a report of the Merchants' Association, of New York, the number of workers in the paper box and tube industry in New York City has declined approximately 50 per cent since 1914. It does not follow, however, that production has declined to the same extent, because in this instance the decline in employment was in part due to the introduction of labor saving machinery in some of the leading establishments in the industry.

* * *

The E. J. Keller Company, Inc., 200 Fifth avenue, has opened a branch office in Stockholm, Sweden, under the management of C. R. Saabye-Christiansen. Mr. Saabye-Christiansen is one of the well known figures in the Scandinavian pulp and paper trade and in addition to having many friends on the other side of the water, Mr. Saabye-Christiansen will be remembered by a number of those in the trade here because of his residence in this country, some seven or eight years ago, for a short period.

PHILADELPHIA MARKET IMPROVED

(*Continued from page* 40)

for parcel post use and for general mailing purposes. To take care of the production of the patented mailing devices there were added two new Stokes and Smith wrapping machines and gluers.

Sylvester S. Garrett, 259 S. 3rd street, has made several improvements in his cutting department, among others the installation of a reinforced steel and wire glass skylight.

C. S. Jones, former treasurer of the Whiting Patterson Company has connected with Ernst and Ernst, certified public accountants.

C. Edgerton Warburton, son of the late director of Public Welfare, Major Barclay Warburton, and grandson of John Wanamaker, has resigned the position he recently accepted with the Garrett-Buchanan Company.

Richard D. Rising of the B. D. Rising Paper Company, Hoosatonic, was a recent visitor to trade circles.

Another salesman has been employed on the forces of the Saxe Paper Company, 320 Race street, in the person of William Ehrlichman, who will cover Philadelphia for the general line of wrapping papers in which the firm specializes. There is being developed by the Saxe Paper Company a specialized line of box makers' papers, among them being the Seafoam colored papers in cloud effects. Proprietor Nathaniel Saxe has just returned from the New York markets where he made arrangements for the representation of other box specialties.

Joseph Reichlen, former visitor to the Philadelphia trade for the Mac Laurin Jones Company of Brookfield, Mass., is now associated with the Meed Patton Company, pulp importers, and his former territory is now covered by representative Montgomery, who formerly looked after the New England trade but whose future time will be devoted to the Philadelphia requirements of gum papers, coated papers and gummed tapes.

H. B. Davis Company, established just a year ago and which recently became distributors for the Southwark line selling direct to the printing trade, has added to his stock the Sealright milk bottle caps, manufactured by the Sealright Company, of Fulton, N. Y.

Representatives of all the fine printing distributors of the city, including President George W. Ward of the D. L. Ward Company, President Allen E. Whiting of the Whiting Patterson Company, James McCracken of Riegel & Co., Harry Donohue of the Molten Paper Company, and Howard Sattertwaith of the Garrett Buchanan Company, were in attendance at the noonday dinner of the Typothetae held during the week in the Boothby Cafe at which there was presented the offer of the public school authorities to establish night classes in the higher branch of printing as a part of public school training. The project was heartily endorsed and a number of promises to send apprentices to the school were made.

J. W. Haraux will this week resign his position as sales manager of the Whiting Patterson Company in order to enter into a partnership in the paper jobbing business in New York City. He will be succeeded by L. F. Supplee who will come over from the New York headquarters with which Mr. Haraux was connected for many years, prior to his advent in this city about a year and a half ago in order to assume the sales management at the Philadelphia headquarters. Frank R. Whiting who recently came to the company from Port Huron, Mich.

Durham and U. S. Mfg. Corp. Bankrupt

An involuntary petition in bankruptcy has been filed against the Durham Paper and Pulp Company in Federal District Court here. The principal offices of the concern are at 17 East Forty-second street and its plant is at Durham, Pa.

At the same time the United States Paper Manufacturing Corporation was petitioned into bankruptcy. It is closely allied with the Durham Paper and Pulp Company with the same offices and plants at Seymour, Conn., Rising Sun, Md., Hadley, Forestport and Napanock, N. Y.

Judge Francis Winslow appointed Charles A. Marshall receiver of both concerns in $10,000 bond.

Petition states the Hadley plant has been wrongfully seized and operations stopped; that some creditors have commenced suit, and alleged bankrupt properties are in process of piecemeal destruction.

Liabilities and assets were not listed. Petitioning creditors were H. Hollesen, Inc., The State Bank and Bulkley, Dunton & Co., with aggregate claims of $60,000. Petition for an ancillary receiver in equity was filed in New York District Court on November 19, 1923, but the order was subsequently vacated. At that time liabilities were estimated at more than $1,000,000 and book value of the assets at more than $2,000,000.

Bondholders to Visit American Whiting

HOLYOKE, Mass., January 29, 1924.—The bondholders' committee of the American Writing Paper Company will pay a visit to the plants in Holyoke and vicinity this week, probably the 30th, to get first hand knowledge of the company's property. Progress is being made in reorganization plans but it is necessarily slow. President S. L. Willson reports decided improvement in the number of orders being received and the size of them. He considers the outlook for the next few months to be brighter than for some time.

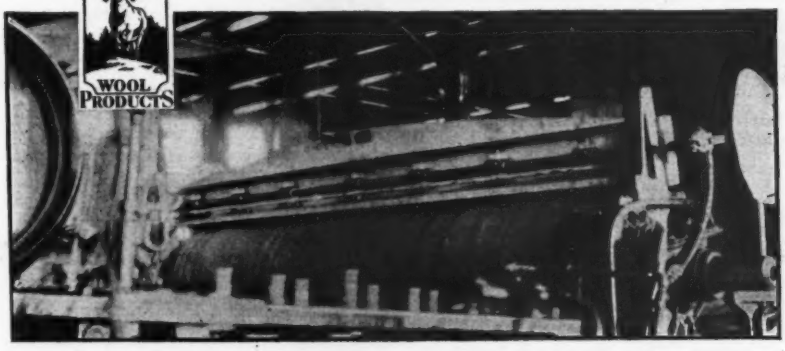
Belgo Company Prospering

MONTREAL, Que., January 28, 1924.—Another striking commentary on the flourishing condition of the Canadian news print industry in 1923 is furnished by the official earnings figures of the Belgo Canadian Paper Company, Limited, for the six months ended, December 31, 1923, showing gross earnings for the period of $1,275,269, and net earnings at the rate of over 15 per cent per annum. These earnings are for the period that the company has been under the control of Canadian interests.

A charter has been obtained by the United Waste Paper Company, of Toronto, which has been incorporated with a capital stock of $40,000. Factory premises have been secured and the organization is now doing an active business.

This Photograph

of a KENWOOD GUARD BOARD in operation was taken on a time exposure of 1¼ minutes, with the machine running 750 feet per minute—NOTE THE ABSENCE OF VIBRATION.



THE KENWOOD GUARD BOARD

It feeds like the lead in a metal pencil, presenting a uniform edge at all points and at all times, INCREASING PRODUCTION and LENGTHENING LIFE OF JACKET.

It is a new application of automatic control to a common Paper Mill operation and results in—

GREATER MACHINE EFFICIENCY—A SMOOTHER and MORE UNIFORM RUNNING SHEET and ELIMINATION OF MANY CAUSES OF BROKE.

For complete information and prices write

F. C. HUYCK & SONS

KENWOOD MILLS
Albany, N. Y.

KENWOOD MILLS, Ltd.
Arnprior, Ontario, Canada

Obituary

George E. Bardeen

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., January 28, 1924.—George E. Bardeen, 74 years old, one of the most widely known paper mill executives in America and practically all his life a resident of Kalamazoo and Otsego, died Saturday morning at his winter home in St. Petersburg, Fla. Word of his death came in form of telegrams from Mrs. Bardeen, who announced she would start north Sunday morning with the remains and expected to arrive here Tuesday over the Pennsylvania system. There will be no attempt to make any funeral arrangements until the remains reach Kalamazoo.

Mr. Bardeen has not been at all well for several years. Naturally very active and energetic, he has been forced into retirement by ill health. He has spent his springs and falls in his beautiful home in Otsego, going north in the summer and to Florida for his winters. Making the usual trip south last fall, he suffered a sinking spell and expressed a desire to return to Michigan, but he later rallied and reports of the extreme cold in the north made him contented to remain at St. Petersburg. He has failed rapidly during the past few days.

In the entire paper industry of America, there are few names more widely or favorably known than that of George E. Bardeen. He literally grew up in a paper mill. He was born in Fitchburg, Mass., November 10, 1850, and while still a young boy, his mother married the late Samuel A. Gibson, recognized as the real founder of the paper industry in the Kalamazoo valley. Mr. Gibson came to Kalamazoo and accepted the presidency and general management of the Kalamazoo Paper Company. That immediately became one of the most successful industries in western Michigan and under the direction of his able step-father, Mr. Bardeen received valuable instruction.

He rose to the position of secretary of the concern and in 1887 resigned and organized the Bardeen Paper Company, of Otsego. Under his direction that concern expanded rapidly and when absorbed by the Allied Paper Mills had two paper mills and a large coating plant.

In addition to the active management of his own business, Mr. Bardeen was also a leading figure in the organization of the Lee Paper Company, Vicksburg; MacSimBar Paper Company, Otsego Coated Paper Company and Babcock Tissue Paper Company (now the Wolverine Paper Company) all of Otsego.

During his years of business activity he was one of the leaders in the American Pulp and Paper Association, being at various times a director and vice-president of that organization.

In addition to paper mill affiliations he was also heavily interested in the Kalamazoo Stove Company, Kalamazoo Malleable Iron Company, Kalamazoo Laundry Company, Globe Casket Company and the Kalamazoo-City Savings bank. At the time of his death he was president of the Kalamazoo Stove Company, and Globe Casket Company, vice-president of the Lee Paper Company, treasurer of the MacSimBar Paper Company and director of those concerns, also of the Allied Paper Mills, Kalamazoo Laundry Company, Kalamazoo Malleable Iron Works and the Kalamazoo City Savings bank.

He was deeply interested in the organization of the Belvidere Resort Association, at Charlevoix, and for many years very active in the management and direction of that association. He enjoyed a wide acquaintance both in the business and social world, his genial presence making him popular and an addition to any coterie of people he was associated with. In disposition he was the typical booster, whether industrially or civically. He was one of the greatest developers of business in the Kalamazoo valley and on all occasions gave his money, effort and influence to make things move.

Despite his assured position in the business and social world, he was democratic in his attitude and popular with his employees. One of his most enthusiastic undertakings was to give Otsego a winning ball team many years ago and to march proudly at the head of that club on numerous occasions.

The immediate members of his family surviving are: A widow, a daughter, Mrs. M. B. McClellan, of Otsego; a son, George Edward Bardeen, Jr., of Kansas City; a brother, Charles Bardeen, of Syracuse, N. Y.; two grand children, the children of Mrs. McClellan and two half sisters, Mrs. F. M. Hodge and Mrs. F. D. Haskell, both of Kalamazoo.

Watertown Men on Pulpwood Embargo

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., January 28, 1924.—A permanent embargo upon all shipments of pulpwood from Canada into the United States was strongly urged by several of the speakers at the annual meeting of the Canadian Pulp and Paper Association held in Montreal last week. This is the report brought back by J. V. Baron, vice president of the Sherman Paper Company, and Charles E. Eaton of the mill and hydraulic engineering firm that bears his name, who returned Sunday night from the meeting.

"They argued that the conservation of Canadian forests demands that the present exportation of pulpwood should be stopped," said Mr. Baron.

An ever increasing amount of Canadian pulpwood is being used in paper mills in this section because of the fact that the supply in the Adirondacks is nearly exhausted. It is seen by local manufacturers that the proposed embargo would quickly close local plants and drive them to Canada.

While the speakers at the convention waxed enthusiastic over the "conservation of the forests" argument, it is felt by local manufacturers that the real motive is to force United States capital across the border into the erection of paper mills there. This would spread the money in Canada and create more active industrial development.

There is one aspect of encouragement in the situation, so far as local manufacturers are concerned. It is said that 80 per cent of the wood shipped across the border comes from free holders. These are settlers who take up claims of government timber with certain requirements for clearing the timber and placing the soil under cultivation. To finance their operations they sell pulpwood. Should the embargo be declared the price of pulpwood for Canadian consumption would drop out of sight. This would mean that the settlers would be unable to finance their operations and would leave the country.

It is felt here that the legislators will hesitate before declaring the embargo on account of the opposition that will be exerted by the settlers and others, and that there need be no fear of immediate action.

Paper Production Increases in Russia

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 23, 1924.—Paper production in Russia increased 70 per cent during 1923 as compared with the previous year, according to a statement appearing in the *"Economitcheskaya Zhisn."* The majority of the mills have improved their equipment, and during the first seven months of last year 39,145 long tons of paper were produced as against 37,339 tons during the whole of 1922 and 24,242 tons in 1921. The total production for 1923 is estimated at 97,000 long tons, or approximately 78 per cent of pre-war production. While the Russian paper trusts are said to be working without losses, the paper industry suffers from a number of handicaps. Consumption of coal exceeds the pre-war rate by 40 to 100 per cent; raw material is wasted uselessly; and notwithstanding the fact that unskilled labor must be employed the wages of the workmen range from 70 to 80 per cent, and in some cases exceed the pre-war level.

5

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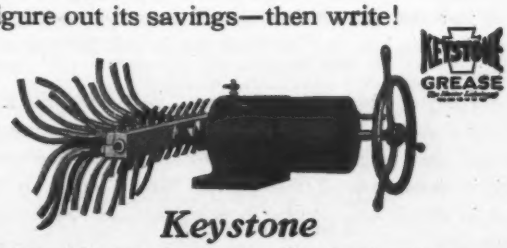

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Editorial

Vol. LXXVIII New York, January 31, 1924 No. 5

HENRY J. BERGER, Editor

TO OUR SUBSCRIBERS

The Postmaster General under date of January 30 issued an order which gives the same expedition to newspapers as is accorded to first class mail. The essence of the order is that newspapers shall not be mixed with parcel post at any point in their dispatch from the publishers' office until their delivery to the addressees. Papers should be handled by themselves and kept in constant transit, not being sent to railroad terminals to be remarked. In other words they are to be handled in the same manner as first class mail. The PAPER TRADE JOURNAL falls under this ruling and subscribers may therefore in the future expect to receive their copies more expeditiously than they have in the past.

THE PAPER BIDS

Due in part at least, doubtless, to the fact that the Joint Congressional Printing Committee seemed disposed to be less arbitrary than in some recent years, more interest was manifested on Monday by paper men in the opening of the paper bids for supplying the Government Printing Office for the year beginning March 1, 1924. The number of bidders while not as great as a half dozen years or so ago, was greater than in recent years and the number of bids in the various items of paper represented was greater than in several years past. The bids, as may be seen from the following comparisons of some of the representative items, are, as usual, very interesting as showing the trend of paper prices for the past year:

The lowest this year on standard news print was made by the Import Paper Company, of Chicago, at 3.85 cents for both the six months and the yearly period. This item last year was awarded to the International Paper Company, New York, at 4.35 cents and in the bidding in 1922 Dobler & Mudge, Baltimore, Md., were low at 3.79, but all the bids were rejected and the supplies of this variety of paper were bought in the open market.

In the bidding this year the Barton, Duer & Koch Paper Company, bid low on machine finish book paper 25x38—35 at 6.43 for both six months and one year. In 1923 this item was awarded to the International Paper Company at 7.37 cents and in 1922 also to the International Paper Company at 6.63 cents.

On rag finish book paper 25x38—40, the Bryant Paper Company, of Kalamazoo, Mich., was low bidder at 9.37 cents. In the bidding last year the Old Dominion Paper Company, Norfolk, Va., was awarded this item at 9.999 cents and in 1922 no bids on it were received.

On super calendered book paper, 25x38—45, the Kalamazoo Paper Company, Kalamazoo, Mich., was low in the current bidding at 6.87 cents for a period of six months. The bidding last year on this item was awarded to the Bryant Paper Company at 7.69 cents and in 1922 it was awarded to the Kalamazoo Paper Company at 6.58 cents.

On half tone book, 25x38—75, the low bidder this year was the R. P. Andrews Paper Company, of Washington, D. C., at 6.53 cents for the yearly period. This item last year was awarded to the International Paper Company at 7.47 and in 1922 to Dobler & Mudge at 5.97 cents.

On single coated book, two sides, 25x38—70, the Broderick Paper Company, of Baltimore, was the low bidder this year at 8.21 cents for the six months period. This item last year was awarded to the Allied Paper Mills of Kalamazoo, Mich., at 9.09 cents, also for the six months period.

On white sulphite writing No. 20, 17x28 and 21x32, the low bidder this year was the R. P. Andrews Paper Company, Washington, D. C., at 6.62 cents for the yearly period. The low bidder on this item last year also was the R. P. Andrews Paper Company, at 7.39 cents for the yearly period.

On white bond paper, glazed and unglazed, tub sized, air or loft dried, No. 20, the low bidder was the Barton, Duer & Koch Paper Company at 11.64 cents for both six months and the yearly period. This item last year was awarded to the Aetna Paper Company at 10.72 cents.

On white commercial ledger, tub sized, air or loft dried, No. 28, the low bidder in the current bidding was the Barton, Duer & Koch Paper Company at 15.79 cents for both the six months nad the yearly period. This item in the bidding last year was awarded to the Aetna Paper Company at 13.82 cents.

On wood manila wrapping, 24x36—38 to 60, the low bidder this year was the R. P. Andrews Paper Company at 4.19 cents for both the six months and the yearly period. The item was awarded to the R. P. Andrews Paper Company also last year at 5.74 for the six months period.

On kraft wrapping, 24x36—50 to 80, the low bidder this year was the Whitaker Paper Company, of Cincinnati, Ohio, at 5.84 cents for the six months period. The successful bidder on this item last year was the same concern at 7.11 cents for the six months period.

TRADE ASSOCIATION STATISTICS

Word reaching Washington regarding trade association activities is said to be to the effect that the trade associations which collect statistics are going to continue to do so in spite of the recent correspondence between the Attorney General and Secretary of Commerce Hoover.

It is understood that some of the best Sherman anti-trust lawyers in the country do not agree with the Attorney General in his attitude toward trade associations and they point out specifically in connection with the decisions of the United States Supreme Court on the subject that the court has never yet ruled on the mere matter of collecting statistics. In the cases which have come before the court on trade associations there have been other violations of law than the mere matter of collecting and sending out statistical information.

In this connection trade association executives are much interested in the recent letter written by President Coolidge to Representative Sydney Anderson, of Minnesota, president of the Wheat Council of the United States. They are of the opinion that the President's letter shows that he does not agree with the Attorney General on the subject of trade associations. In his letter to the Wheat Council the President says:

"The work of the Wheat Council of the United States has interested me greatly and I am writing to say that I believe great

practical benefit is likely to derive from it. The effort, in an organized and systematic way, to establish such measure of control over the wheat acreage as will measurably insure against overproduction is altogether to be commended. Almost every important business, except agriculture, has trade organizations and associations through which it is possible to deal with such vitally important matters. Quite obviously the business of agricultural production would benefit by the same methodical approach to the underlying problems which it must always confront. It seems apparent, too, that much benefit should come from an organized and efficient move to increase the demand for wheat products, through the established methods of business exploitation, so successfully employed in marketing other staples."

Great Activity in Laurentide Stock

MONTREAL, Que., January 29, 1924.—There has been great activity in the stock of the Laurentide Company on the Montreal Stock Exchange during the past week as a result of rumors that the proposed merger of four news print mills in the St. Maurice Valley has advanced to the extent that meetings of the Laurentide directors are being held to consider the proposals put forward. There seems every reason to believe that those closely connected with the other three companies, St. Maurice Paper Company, Belgo Canadian Paper Company and St. Lawrence Paper Mills, are rapidly reaching a basis in connection with the program for a merger. The same does not appear to be true, however, in regard to the Laurentide position, and it would not surprise many if negotiations were somewhat protracted in an effort to bring the Laurentide management to agree with the estimate of Laurentide's assets that appears to be held by the other three parties to the amalgamation.

From the start there seems to have been a determination on the part of Laurentide to maintain the identity of its name in any merger in which it took part. Then, there is a deep-rooted feeling in the value of the Laurentide Power Company as an asset that has not been appreciated sufficiently up to the present. Laurentide, as is well-known, controls three-quarters of the stock of this company, and has a mutually profitable contract with it for the supply of power to the adjoining pulp and paper mills.

A third element in the situation is that of timber limits. There has been a disposition on the part of the other mills, it is held by Laurentide enthusiasts, to assume that the Laurentide Company was in dire need of limits. The claim is made, however, on behalf of Laurentide that it at least knows accurately the extent of its own limits, and that it has ample to supply it with all its requirements until such time as its new baby forests are ready for the axe.

The fourth element that is not generally appreciated by those who have not had the good fortune to journey down to Grand 'Mere, is the town site that has been built up, to provide comfortable and attractive means of living for the employees of the company. A large amount of money has been expended to change a rough woodland into a beautiful town, and the company will insist on a high valuation being placed on this unique form of asset.

The capital involved in the proposed combination should total around $70,000,000 of which approximately $50,000,000 is presently represented by common stock issued, or to be issued. The deal, it is said, will be swung by a very strong financial syndicate in which New York interests are represented through the National City Company.

The Financial Times of Montreal, in discussing the proposed merger, refers to the further suggestion that such firms as Abitibi and Spanish River might come into the combine. The paper expresses the opinion that as regards the merger of the four mills in the St. Maurice Valley it might mean saving in operating costs but it doubts whether the manufacturing processes of the four mills could be carried out more efficiently than at present. Referring to the question of the larger merger, it says this would be a danger as it would at once suggest to American publishers a huge news print trust which might easily result in an increased cost to them of news print. It continues, "At once goodwill would be replaced by antagonism, and instead of lending their full support to the Canadian field as a source of supply, they would turn away to Europe as a possible source of relief from what they would be certain to regard as an attempt to 'corner' the news print market, and extort an unfair price and an unfair profit for the product of the Canadian mills."

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 30, 1924.—The Government Printing Office has received the following bids for 7,800 lbs. map paper, sample B, 38x48—78 No. 16: Old Dominion Paper Company, $.16639 per lb.; Dobler & Mudge, $.19; R. P. Andrews Paper Company, $.1794; Reese & Reese, $.2049; American Writing Paper Company, $.2129; Barton, Duer & Koch Paper Company, $.163; T. A. Cantwell & Co., $.2254; Baltimore Paper Company, $.2225.

The Government Printing Office has received the following bids for 2,700 lbs. dark pink glazed bond paper, 22x34—18, No. 9: Whiting-Patterson Company, $.26 per lb.; The Broderick Paper Company, $.272; American Writing Paper Company, $.20; Barton, Duer & Koch Paper Company, $.2375; Old Dominion Paper Company, $.1989 and $.2448; Dobler & Mudge, $.24; R. P. Andrews Paper Company, $.2284.

The printing office also received bids for 36,000 lbs. of wood manila paper, 21x32—30 flat, as follows: R. P. Andrews Paper Company, $.051 per lb.; Whitaker Paper Company, $.0502, $.0497; Samuel S. Alcorn, $.0535; Maurice O'Meara, $.0575; Graham Paper Company, $.0518; Old Dominion, $.05249; Whiting-Patterson Company, $.0509; Barton, Duer & Koch Paper Company, $.0478, and $.0569; George W. Miller & Co., $.0493; T. A. Cantwell & Co., $.055; Coy, Disbrow Company, $.049; Garrett-Buchanan Company, $.0565 and $.0575; Trinity Bag & Paper Company, $.0478; Cushnoc Paper Company, $.04655; Osburn Paper Company, $.0545.

Bids for 50,000 lbs. binders board, No. 2 quality, 25x30, were as follows: Twin Falls Binders Board Mills Inc., $80.50 per ton; C. B. Hewitt & Brothers, $81.50; Kerr Paper Mill Company, $75; The Whitaker Paper Company, $75.40; Dobler & Mudge, $75.50; The La Boiteaux Company, $71.50; Consolidatel Paper Company, $80.00.

Also on 86,000 lbs. white S. & S. C. printing paper, 38x48—86 lbs. flat: R. P. Andrews, $.0664; Allied Mills, $.07245; American Writing Paper Company, $.0899; Dobler & Mudge, $.0682; Kalamazoo Paper Company, $.07; Old Dominion Paper Company, $.07369; Barton, Duer & Koch Paper Company, $.0624; Maurice O'Meara Company, $.0725.

The Cushnoc Paper Company has been awarded the contract for furnishing the Government Printing Office with 36,000 pounds (1,200 reams) of 21x32—30, wood manila paper at $.04655.

The American Writing Paper Company will furnish 5,000 pounds of 22x34—16, dark pink glazed bond paper at $.20 per pound. Bids for these items were received on January 18.

The Bryant Paper Company has been awarded the contract by the Government Printing Office for furnishing 7,300 pounds (100 reams) of 32x48—73, white S. & S. C. printing paper at $.1045 per pound, bids for which were received on January 9.

Skowhegan Paper Co. to Resume

[FROM OUR REGULAR CORRESPONDENT.]

SKOWHEGAN, Me., January 28, 1924.—Crews have been put at work making a general renovation of the Skowhegan Paper Company's plant, which has been closed for several months. The mill will open shortly.

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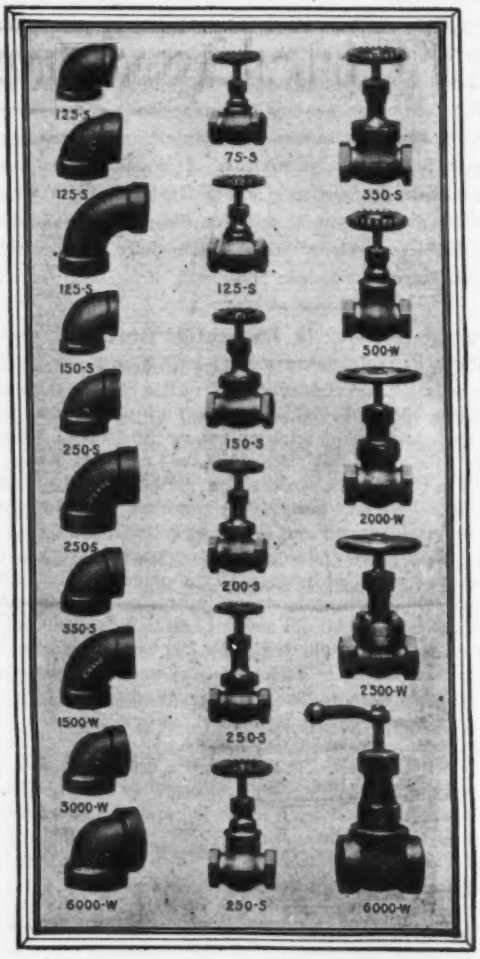

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

DISCUSSION OF THE HEAT BALANCE IN BOILER TESTS*

By A. Linguet.

The establishing of a heat balance in making boiler tests seems to be daily gaining in favor, owing to the scientific and mathematical accuracy of the method used in making it. Is this favor really deserved? And do the results obtained by this method justify the conclusions drawn from them? Such are the two questions which we intend to examine, and answer if possible, in the present article.

In calculating the heat balance for boiler operations, the following go to make up the heat lost:

1—Sensible heat of the flue gases;

2—Heat lost through incomplete combustion of carbon to carbon monoxide, instead of complete combustion to carbon dioxide;

3—Heat lost by radiation and conduction.

The heat carried off in the flue gases is determined by estimating the volume of the gases from their composition and the ultimate analysis of the fuel, taking it for granted that the whole of the carbon in the fuel is found by analysis in the combustion gases. This postulate, however, is far from being self-evident; for, neglecting metallurgical and such furnaces for the time being and considering only boiler furnaces, on looking at the many factory chimneys belching forth dense black smoke or after having received a few cinders in the eye when travelling on a steam railway, it is quite evident that a certain amount of carbon escapes combustion and is carried away by the flue gases. It remains to be seen whether or not the amount of carbon thus lost is small enough to be neglected when making out the heat balance, and if this simplification in the calculation affects the conclusions drawn.

But before entering into the heart of the subject, it may be well to review some of the general principles governing the phenomena of combustion, to make the subsequent discussion easier to follow.

Chemical Phenomena of Combustion

Whatever the nature of the fuel considered (with the exception of fixed carbon, coke, and the producer gases hydrogen and carbon monoxide), from our standpoint in this particular instance (namely, the production of carbon black and soot) all combustions can be brought to a single type, the combustion of a hydrocarbon. It is quite certain, as can be seen merely by observing a flame, that the combustion of hydrocarbons takes place in two distinct stages, which under certain special conditions can appear to take place simultaneously (blue flame burners).

First Stage—The hydrogen has a decided tendency to combine first with the oxygen, with liberation of the carbon (production of lamp black). It should be noted, however, that the first stage of the combustion does not always take place as simply as this. It is quite plausible to admit that when heavy hydrocarbons are atomized and raised suddenly to a high temperature there is a partial breaking down of the molecule (cracking), with formation of light portions which can burn immediately and of much heavier portions which are then coked with all the usual intermediate stages generally involved. The product of this process is no longer the extremely finely divided and light carbon black which subsequently is burned, but a very fine though much denser form of carbon, which is more refractory to oxidation.

Second Stage—The liberated carbon must then burn in an atmosphere which is poorer in oxygen, both on account of the amount of oxygen taken up by the hydrogen and because the total volume of gas has increased, each volume of oxygen absorbed giving rise to two volumes of water vapor.

Now, the combustion of carbon can be sustained without the aid of outside heat only if the reaction is sufficiently active to maintain a certain minimum temperature, which is a function, amongst other factors, of the oxygen content of the atmosphere. If the amount of oxygen in the flame is not amply sufficient for the carbon to avail itself instantaneously of the heat generated by the combustion of the hydrogen or even of the temperature in the furnace during the time required for its complete combustion, the carbon will evidently be carried away as such up the chimney.

On the other hand, we know that, other things being equal, the affinity of carbon for oxygen, or rather what might be termed its combustibility, increases with the temperature and the partial pressure of the oxygen in the atmosphere. Starting from zero at temperature below dull red in an atmosphere of pure oxygen and for the most favorable allotropic modifications of carbon, it rises to such a value at high temperatures that the carbon can effect partial and relatively slow reduction of carbon dioxide and of water vapor.

As a result of the properties which we have just discussed, a certain amount of cooling of a yellow flame will inevitably cause the formation of free carbon, without any appreciable production of carbon monoxide (exemplified in the well-known experiment of placing a wire gauze in a flame); and the lower the proportion of oxygen the smaller the amount of cooling required. A supplementary dilution of the oxygen by addition of an inert gas like water vapor cannot but facilitate this loss.

It does not fall within the scope of this discussion to follow these arguments any further; for we made use of them only to justify the chemical reactions which we shall use in criticising the

*Translated from *Chimie et Industrie* x, 829-835, November, 1923, by A. Papineau-Couture.

present accepted method of establishing the heat balance and in devising a method of estimating the amount of unburnt carbon.

Using the above data as a starting point, we shall now study a few of the reactions which can take place during thke combustion of a hydrocarbon, disregarding all secondary reactions. We shall follow the variations in the production of carbon with variations in the excess of air, without worrying unduly about the formation of small amounts of carbon monoxide which might take place under certain conditions. For if we took this into account, it would render the calculations extremely complicated without appreciably changing the general conclusions reached.

Examples of Typical Combustion Equations

As an example we shall consider the combustion of the hydrocarbon C_7H_{16}, having a molecular weight of 100 and containing 84 per cent of carbon and 16 per cent of hydrogen, which composition approximates fairly closely to that of fuel oils, and we shall assume that air consists of 4 volumes of nitrogen to 1 volume of oxygen. The theoretical combustion equation will be $C_7H_{16} + O_{22} + 88N = 7CO_2 + 8H_2O + 88N$; and after condensation of the water vapor we will have 14 + 88 = 102 atomic volumes of gas having a percentage composition of 13.72 carbon dioxide and 86.28 nitrogen. If, now, we vary the proportion of air and of unburnt carbon, we can write the following equations:

1—$C_7H_{16} + O_{20} + 112N = 7CO_2 + 8H_2O + O_6 + 112N$
2—$C_7H_{16} + O_{21} + 108N = 7CO_2 + 8H_2O + O_5 + 108N$
3—$C_7H_{16} + O_{20} + 104N = 7CO_2 + 8H_2O + O_4 + 104N$
4—$C_7H_{16} + O_{25} + 100N = 7CO_2 + 8H_2O + O_3 + 100N$
5—$C_7H_{16} + O_{22} + 88N = 6CO_2 + 8H_2O + O_2 + 88N + C$
6—$C_7H_{16} + O_{24} + 96N = 6CO_2 + 8H_2O + O_4 + 96N + C$
7—$C_7H_{16} + O_{20} + 80N = 5CO_2 + 8H_2O + O_2 + 80N + 2C$
8—$C_7H_{16} + O_{22} + 88N = 5CO_2 + 8H_2O + O_4 + 88N + 2C$
9—$C_7H_{16} + O_{18} + 72N = 4CO_2 + 8H_2O + O_2 + 72N + 3C$
10—$C_7H_{16} + O_{20} + 80N = 4CO_2 + 8H_2O + O_4 + 80N + 3C$
11—$C_7H_{16} + O_{24} + 96N = 6CO_2 + 8H_2O + O_3 + 96N + CO$

We see that in these equations we have the following excesses of air:

1 — 6/22 = 27.2 per cent 2 — 5/22 = 22.7 per cent 3 — 4/22 = 18.2 per cent
4 — 3/22 = 13.6 per cent 5 — 0 6 — 2/22 = 9.1 per cent
7 — 2/22 = 9.1 per cent 8 — 0 9 — 4/22 = 18.2 per cent
10 — 2/22 = 9.1 per cent 11 — 2/22 = + 9.1 per cent

These results can be tabulated as follows:

Equation	Composition of gases (free from water) CO_2	O	N	Per cent air in excess of theory: Present method	True excess	Carbon lost per cent of fuel
Theory	13.72	0	86.28	0	0	0
1	10.60	4.54	84.86	27.2	27.2	0
2	11.02	3.93	85.05	22.7	22.7	0
3	11.47	3.28	85.35	18.2	18.2	0
4	11.96	2.56	85.48	13.6	13.6	0
5	11.76	1.96	86.28	10.0	0	12
6	10.71	3.57	85.72	20.0	9.1	12
7	10.87	2.17	86.96	11.1	—9.1	24
8	9.80	3.92	86.28	22.2	0	24
9	9.75	2.44	87.81	12.5	—18.1	36
10	8.69	4.35	86.96	25.0	—9.1	36
11	10.68 CO_2 1.78 CO	2.65	84.95	9.1	+9.1	0

In calculating the total volume of the gases expressed in molecular volumes (including water vapor) from one kilo of fuel, the following formula is used at present:

$$\frac{\text{grams of C (in 1 kg. of fuel)} \times 100}{\text{Per cent } CO_2 \text{ in the gases} \times 12} + \frac{\text{grams of H (in 1 kg. of fuel)}}{2}$$

A comparison of the results obtained by means of this formula and of the true results from the equations is given below:

Equation	Vol. by usual method	True Vol.	Diff.	Error Per Cent
Theory	510 + 80 = 590	590	0	0
1	660 + 80 = 740	740	0	0
2	635 + 80 = 715	715	0	0
3	610 + 80 = 690	690	0	0
4	585 + 80 = 665	665	0	0
5	595 + 80 = 675	590	85	14.4
6	653 + 80 = 733	640	93	14.5
7	644 + 80 = 724	540	184	34
8	714 + 80 = 794	590	204	34.5
9	718 + 80 = 798	490	308	63
10	805 + 80 = 885	540	345	64
11	564 + 80 = 645	645	0	0

Judging from these results and calculating by the method at present in use for establishing the heat balance, combustion No. 5 would be considered as excellent, in spite of the fact that 12 per cent of carbon is completely lost, and there is actually no excess of air though it was calculated to be 10 per cent. And combustion No. 7, which shows a loss of 24 per cent of carbon, would still be classed as very good. The CO_2 content of the gases in combustions Nos. 8, 9 and 10 would be considered as somewhat low, but No. 9 will still give quite a good balance (in spite of a loss of 36 per cent of carbon), as will be illustrated by an example further on. On the other hand combustion No. 11 is decidedly bad, for there is 2 per cent of carbon monoxide.

Examination of the results obtained by means of these few equations which were chosen, it is true, amongst the most typical, but the plausibility of which will be justified by comparison with analyses of flue gases from furnaces actually in normal operation, brings out the following points:

1—The determination of CO_2, O and CO alone in flue gases can lead to absurd conclusions as to the efficiency of the furnace (Combustions Nos. 5 and 7 would be considered better than the preceding ones, even than No. 4 which is practically perfect from a commercial standpoint);

2—The oxygen content of the flue gases, when considered alone, can lead to conclusions diametrically opposite to what they should be (equations 5, 7 and 9);

3—The calculation of the excess of air from the ratio of residual oxygen less what should have been consumed by the carbon monoxide (O — CO/2) to total oxygen (N/4) minus this same quantity (O — CO/2) always gives inaccurate results, for there is always some unburnt carbon, no matter how little. The results obtained can even become paradoxical at times (equations, 5, 7, 8, 9 and 10);

4—There are considerable errors in the calculation of the volume of the gases, and consequently also of the heat carried off by them (14 to 64 per cent too high in equations 5 to 10). It is true that the sign of this error is opposite to that of the other errors mentioned above in calculating the balance;

5—Presence of carbon monoxide in the gases does not necessarily mean that the combustion is bad.

Estimation of the Amount of Unburnt Carbon

Now that we have shown that the error exists, we must turn our attention to eliminating it and to finding a method of estimating the amoun of unburnt carbon from the only data which can be obtained practically, namely, the analysis of the flue gas.

Referring once more to our typical equations, it is evident that the oxygen which combines with the hydrogen of the fuel is eliminated as condensed water. If we could estimate this deficit of oxygen in the gases, we could calculate the weight of fuel burnt for a given volume of flue gases, and hence the amount of carbon supplied. As, on the other hand, we know from the CO_2 and CO contents the amount of carbon actually burnt, the loss is obtained by difference.

Calculating the Deficit of Oxygen

Carbon dioxide contains its own volume of oxygen, and carbon

monoxide half its own volume; if to the sum of the two we add the free oxygen in the gases, we shall have the total amount of oxygen supplied for combustion, less that which was eliminated with hydrogen as water.*

The total volume of oxygen is proportional to that of nitrogen. And as the latter goes through the combustion practically unchanged, the volume of oxygen combined with the hydrogen is readily found.

If we express the gas analysis in atomic volumes, one atomic volume of oxygen corresponds to two atomic volumes of hydrogen, i.e., to 2 grams. CO_2 and CO each contain 12 grams of carbon in the two atomic volumes occupied by one gram-molecule. Calculate the amount of burnt carbon equivalent to the hydrogen contained in 100 grams of fuel, and subtract from the amount actually present in the coal as determined by analysis. The difference gives the amount of carbon lost in the gases. As the reasoning is best followed by means of an example, we shall take equation No. 11, and shall assume that air contains 20 per cent of oxygen, just as we did in making out the equations:

$$\text{Total oxygen supplied} = \frac{\text{Nitrogen}}{4} = 21.24$$

Free and combined oxygen in the gases (after condensation of the water vapor): $2.65 + 10.62 + \frac{1.78}{2} = 14.16$

Oxygen combined with hydrogen = 21.24 — 14.16 = 7.08

The analysis of the gases being considered in terms of atomic volumes, we would have 7.08 volumes of oxygen equivalent to 14.16 volumes of hydrogen, that is to 14.16 grams of hydrogen.

The burnt carbon found by analysis of the gas is $(\frac{10.62}{2} + \frac{1.78}{2})$ 12 = 74.40 grams, corresponding to 14.16 grams of hydrogen burnt. For the 16 grams contained in 100 grams of fuel, we have $\frac{74.40 \times 16}{14.16}$ = 84. As 100 grams of fuel contain 84 grams of carbon, all the carbon is found in the gases by analysis, as indicated by equation 11.

Equation 5 gives us the following results:

Analysis of the flue gas: Co_2 11.764, 01.96, N86.276 per cent

Total oxygen	$\frac{86.276}{4} = 21.569$
Oxygen present in the gases	11.764 + 1.96 = 13.724
Oxygen eliminated as water	7.845
Equivalent hydrogen	15.690
Carbon burnt (corr. to 15.69 volumes of H)	$\frac{11.764 \times 12}{2} = 70.584$
Carbon burnt (corr. to 16 volumes of H)	$\frac{70.584 \times 16}{15.69} = 71.98$
	Say 72

Carbon lost: 84 — 72 = 12 per cent, which is the figure indicated by equation 5.

Application to Some Practical Results

As we cannot furnish results obtained in the course of experiments carried out especially to verify our assertions, we shall apply the method to publish examples of combustion under boilers fired with fuel oil.*

*It should be mentioned, however, that all the missing oxygen has not been removed exclusively by the hydrogen. In certain cases it may be necessary to take into consideration the sulphur content of the fuel, which burns mostly to SO_2, and is thus not taken into consideration in the analysis owing to its great solubility in water. Now, 32 of sulphur combine with as much oxygen as 4 of hydrogen, and with certain fuels a sulphur content of 3 per cent is not uncommon. This is equivalent to 0.4 per cent of hydrogen, which of itself is not a very large error, but which can become relatively important in certain cases, especially when dealing with coal.

*Taken from *Revue Générale des Chemins de Fer* (January, 1921), "Heating Locomotives with Fuel Oil."

N. B.—Our previous approximation concerning the composition of the atmosphere cannot be adopted here, as it is taken as a basis for our calculations. We shall therefore use the figures 21 per cent of oxygen and 79 per cent of nitrogen, which are very close to the true composition of air.

Example I.—Boiler of oil-burning torpedo boat.

Fuel—Baku oil, containing carbon 87 per cent and hydrogen 13 per cent.

Flue gas analysis: CO_2 13.1 per cent; O 3; N 83.9

Excess air $\frac{3}{20.97 - 3} =$ 16.6 per cent

Efficiency 70.9 per cent

Applying the above described method of calculation, we have:

Total Oxygen $83.9 \times \frac{21}{79} = 22.17$ volumes

Combined and free oxygen in gas $13.1 + 3 = 16.10$

Oxygen eliminated as water 6.07

Hydrogen burnt $6.07 \times \frac{2}{12} = 12.14$ grams

Carbon burnt (for 12.14 H) $13.1 \times \frac{12}{2} = 78.60$ grams

Carbon burnt (for 13 g. H) $\frac{78.6 \times 13}{12.14} = 84.15$ grams

Loss of carbon 87 — 84.15 = 2.85 per cent of fuel

Oxygen used for the combustion of 100 grams of fuel $\frac{22.17 \times 13}{12.14} = 23.7$ volumes

Oxygen required for the theoretical combustion of 100 grams of fuel $2 \times \frac{87}{12} + \frac{13}{2} = 21.0$ volumes

Excess of air $\frac{23.7 - 21.0}{21} = 13$ per cent

The loss of carbon is small, as is also the excess of air. This is an example of a very good combustion, and the errors in calculation are small (compare with equation 4).

Example II.—Two combustions with fuel oil, which were considered excellent.

Composition of fuel: Carbon 87.9 per cent, hydrogen 10.78 per cent.

Analysis of flue gas:

1st combustion		2nd combustion	
CO_2	13.2 per cent	CO_2	12.6
O	3.6	O	4
N	83.2	N	83.4
CO	0.0	CO	0.0
Excess of air	20.9 per cent	Excess of air	23.7 per cent

Calculations similar to those of the preceding example give:

1st Combustion:

Hydrogen $(22.15 - 16.8) \times 2 = 10.70$ grams

Carbon burnt (for 10.70 of hydrogen) $\frac{13.2}{2} \times 12 = 79.2$ grams

Carbon burnt (for 10.78 of hydrogen) $\frac{79.2 \times 10.78}{10.70} = 79.7$ grams

Loss of carbon 87.9 — 77.9 = 8.2 per cent of the fuel

Excess of air: Oxygen used per 100 g. $\frac{22.15 \times 10.78}{10.7} = 22.31$ vols.

Theoretically required $\frac{87.9 \times 2}{12} + \frac{10.78}{2} = 20.04$ vols.

Excess $\frac{22.31 - 20.04}{20.04} = 11.3$ per cent

The loss of carbon is considerably greater, as is also the error in the calculation of the excess of air (compare equation 6).

2nd Combustion:

Hydrogen $(22.16 - 16.6) \times 2 = 11.12$ grams

Carbon burnt (for 11.12 of hydrogen) $\frac{12.6 \times 12}{2} = 75.6$ grams

Carbon burnt (for 10.78 of hydrogen) $\frac{75.6 \times 10.78}{11.12} = 74.9$ grams

Loss of carbon $87.9 - 74.9 = 13$ per cent of the fuel

Excess of air: $\frac{21.48 - 20.04}{20.04} = 7.20$ per cent

The loss is still greater than in the preceding example; and the same is true of the excess of air, which is really only 7.2 per cent instead of the 23.7 per cent which had been calculated. It is thus seen that the combustion is very far from being excellent (compare equation 6).

Example III.—Locomotive fired with fuel oil atomized by means of steam. Composition of fuel: Carbon 86.1, hydrogen 11.7, impurities 2.2 of which 1.5 water; Calorific value 10,500 calories, heat actually available (correcting for latent heat of water formed during combustion) 9,871 calories.

Analysis of flue gas:

CO_2	10.57 per cent
CO	0.22
O	4.55
N	84.64

Steam used for injecting oil — 0.450 kilo per kilo of oil.

Excess of air $\frac{4.55 - 0.11}{21.16 - 4.55 - 0.11} = 26.5$ per cent

Calculating from the above data, we find:

Hydrogen $\left(84.64 \times \frac{21}{79} - (10.57 + 4.55 + 0.11)\right) \times 2 = 14.54$ grams

Carbon burnt (for 100 g. of fuel) $(10.57 + 0.22)\ 6 \times \frac{11.7}{14.54} = 52.09$

Loss of carbon $86.1 - 52.1 = 34$ per cent of the fuel.

This last figure doubtless appears rather excessive*; and one is inclined to doubt if the flue gas samples were properly taken. But they were taken over brine which had been previously saturated with the gases. And at any rate, as we merely intend to compare the published results with those obtained by our method of calculation, we must evidently use the same data without changing them in any respect.

The amount of oxygen supplied to burn a quantity of fuel containing 14.54 grams of hydrogen is equal to 21/79 of the nitrogen contained in the gases; hence, for 100 grams of fuel

$$84.64 \times \frac{21}{79} \times \frac{11.7}{14.54} = 18.1 \text{ atomic volumes of oxygen}$$

were supplied. The hydrocarbon $C_{\frac{86.1}{12}} H_{11.7}$ requires for a theoretically perfect combustion $\frac{86.1}{12} \times 2 + \frac{11.7}{2} = 20.2$ atoms of oxygen; that is, 20.2 atomic volumes. As only 18.1 volumes were furnished, there was a deficiency of $20.2 - 18.1 = 2.1$ volumes, which is $\frac{2.1}{20.2} = 10.39$ per cent of the required amount.

*This really means only about 30 mg. of carbon per liter of gases at ordinary temperature, without taking into consideration the steam used for injecting the oil—which almost doubles the volume—nor the temperature of the gases as they leave the stack.

It is thus seen that this combustion was conducted under very bad conditions, there being a deficiency of 10 per cent of the theoretical amount of air, and of at least 20 per cent of the amount which would be required in good operating practice. And yet we read in the conclusions drawn from the results of the test: "The combustion of the oil takes place under excellent conditions, there being a slight excess of air, 26.5 per cent, and the combustion is complete. The thermal efficiency (see further on) is very satisfactory, and it can be but slightly improved by decreasing the excess of air. But this must be done with care to avoid incomplete combustion."

We have seen that for every 100 atomic volumes of gases (the water being condensed) there were 14.54 grams of hydrogen burnt, which give rise to 14.54 atomic volumes of water vapor. Hence the total amount of flue gases produced for each 14.54 grams of hydrogen is 114.54 atomic volumes, and for 1 kilo of fuel (containing 117 grams of hydrogen) the total volume is

$$\frac{114.54 \times 117}{14.54} = 921.6 \text{ atomic volumes, or } 460.8 \text{ molecular volumes.}$$

Using the method adopted in the heat balance which we are discussing, but taking into consideration the unburnt carbon in the gases, we would have:

Carbon contained in 100 molecular volumes of gases (water condensed)

$$10.57 \times 12 + 0.22 \times 12 = 129.48 \text{ grams of carbon.}$$

1 kilo of fuel gave only 861—340 = 521 grams of carbon burnt; it must therefore have given rise to $\frac{100 \times 521}{129.48} = 402.3$ molecular volumes of gases, to which must be added the water vapor produced, namely 117/2 = 58.5 molecules. The total volume of gases from 1 kilo of fuel is therefore 402.3 + 58.5 = 460.8 molecular volumes, which is identical to the result found above.

In calculating the heat lost, we must add:

1—The water present as free moisture in the fuel $\frac{15}{18} = 0.8$

2—The steam used for atomizing the oil $\frac{450}{18} = 25$

giving a total volume of 460.8 + 0.8 + 25 = 486.6, with a loss of heat of:

1—Incomplete combustion of carbon (to CO instead of CO_2) 61.4 cals.

2—Latent heat of the gases 1,143.4 cals.

A similar calculation on the assumption that all the carbon is burnt gives:

Total volume of gases 665 + 0.8 + 25 = 690.8 molecular volumes.

1—Incomplete combustion of carbon (to CO) 102 calories

2—Latent heat of the gases, 1,736.4 calories.

Recapitulation of Results

First Method—All the carbon is supposed to be burnt and found by analysis of the flue gases.

Second Method—Only the hydrogen is completely burnt.

	First method	Second method
Example I:		
Carbon lost in the gases	0	2.85 per cent
Excess of air.....	16.6 per cent	13.0 per cent
Example II:		
(1) Carbon lost	0	8.2 per cent
Excess of air.....	20.9 per cent	11.3 per cent
(2) Carbon lost	0	13.0 per cent
Excess of air.....	23.7 per cent	7.2 per cent

Example III:

Carbon lost	0	34.0	per cent
Excess of air	26.5 per cent	—10.4	per cent
Total vol. of gases in molecular volumes	690.8	486.6	
In cu. m. at 0° and 760 mm.	15.4	10.8	

Heat Balance

	Calories	Calories
Available heat in the fuel	9,871	9,871
Heat from atomizing steam	39	39
Total	9,910	9,910
Heat Lost.		
Incomplete combustion of C (to CO)	102	62
Unburnt C (calorific value 8,000 cal.)	0	2,720
Heat of the gases	1,736	1,144
Radiation and conduction (estimated)	300	300
Useful Heat.		
Production of useful steam	7,479	5,391
Production of steam for atomizing	293	293
Total	9,910	9,910

Distribution of the Heat

Incomplete combustion of C	1.0 per cent	0.6 per cent
Unburnt C	0.0	27.4
Heat of the gases	17.5	11.5
Radiation and conduction	3.0	3.0
Production of useful steam	75.5	54.5
Production of steam for atomizing	3.0	3.0
Thermal efficiency of the boiler	78.5 per cent	57.5 per cent

These results require no comments and are a direct reply to the questions with which we began this article.

Conclusions

It would be rash indeed to determine the absolute accuracy of the above results, nor have we the least pretension to do so. Our sole aim was to draw the attention of combustion engineers to some purely chemical aspects of the problem of combustion, which do not seem to be getting all the attention which they deserve, and the neglect of which is the cause of drawing conclusions such as the following:

1—When combustion is incomplete owing to a deficiency of air, the amount of air should be cut down to improve the combustion;

2—To improve the efficiency of the boiler, the fuel should be burnt as inefficiently as possible. (Example I, with a 3 per cent loss of carbon gave an efficiency of 70.9 per cent; while Example III, with a 34 per cent loss of carbon gave an efficiency of 78.5 per cent).

These paradoxical results bring out forcibly the urgent necessity of a complete revision of the methods used up till now for studying and improving the utilization of fuels.

Note on the Analysis of the Fuel and of the Flue Gases

It may appear speurfluous to draw attention to the preponderating importance of the taking of the gas sample and its analysis and of the elementary analysis of the fuel in the calculation of the unburnt carbon from the amount of hydrogen burnt; and yet, though the importance may be quite evident in a general way, it may not be amiss to emphasize a few of the precautions which should be taken to avoid some very serious errors.

We have seen above (in a foot note) that the sulphur in the fuel can introduce a slight error in the calculation of the amount of oxygen condensed in the form of water vapor. The same is true of the oxygen present in the fuel, both as organic and other radicles (hydroxyl, carboxyl, etc.) and as hygroscopic water. These three factors, which are generally of negligible importance in the case of liquid hydrocarbons (petroleum), may acquire a relatively great importance in the case of coal.

Coal always has a hydrogen content very close to 5 per cent. On the other hand it can contain a few per cent of sulphur and from 2 to 14 per cent of oxygen. Now, 14 of oxygen will combined with 1.75 of hydrogen, thereby introducing an error of $\frac{1.75 \times 100}{5} = 35$ per cent of the amount of hydrogen used in establishing the heat balance. It is just as well to do without the balance as to make it out under such conditions, which are just as bad as, if not worse than, to assume that all the carbon is burnt and accounted for by the analysis of the flue gases.

These interfering factors complicate the calculations to a certain extent; but the difficulty is by no means insurmountable.

Let us now look into the taking of the sample of gas and its analysis. First of all, there are two cases to consider, according as to whether a single test is being run or else a general heat balance is being established for the average operations of the boiler.

In the first case we want to know the composition of the gases for short periods, independent of one another, and we are concerned more with the variations in composition than with the average composition over a relatively long period.

The right thing to do is therefore to take the sample directly from the flue into the analyzer, unless this is impossible for some reason or other.

In the second case, on the other hand, we want to find out the average composition of the gases during a certain period. Here again we can have two distinct cases:

1—Combustion takes place continuously and the fuel does not stay any length of time in the combustion chamber. This is what happens in burning liquid hydrocarbons, the combustion being completed in the very short time which the atomized oil takes in passing through the furnace. Under these conditions, the arithmetic mean of a certain number of analyses gives sufficiently accurate results, provided there were no great variations in the proportions of air and fuel.

2—Combustion takes place in two distinct stages from the time the fuel is fed into the furnace until combustion is complete. This is what happens with coal.

First Stage—Under the action of the high temperature prevailing in the furnace, the volatile hydrocarbons of the fuel distill rapidly and do not burn sufficiently rapidly, resulting in the production of considerable amount of black smoke. The gases which are collected at this stage cannot correspond with the ultimate composition of the whole fuel, nor even with that of the volatile matter of the coal, as part of the fixed carbon from preceding charges remains on the grate and burns at the same time.

Second Stage—After the elimination of the greater portion of the volatile, the combustion of the fixed carbon predominates, until a fresh charge of fuel is introduced.

It is evident, then, that the gases must be sampled carefully and uniformly so as to obtain a true average of the composition of the gases over the whole period under consideration.

Appraisers for Carthage Sulphite Co.

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 28, 1924.—The appraisers of the property of the Carthage Sulphite Pulp and Paper Company, appointed last week by Federal Judge Cooper, have just been announced by Attorney Charles E. Norris of Carthage, receiver.

They are: Charles H. Burrows of Little Falls, president of the Mohawk Valley Paper Company; Frank L. Moore of this city, former president and general manager of the Newton Falls Paper Company; Attorney James F. Aiken of Ogdensburg.

The appraisers will undertake at once the work of determining the assets of the company. Whether or not the property will be sold or the mill returned to operations is not known as yet.

DEFINITION OF PAPER TERMS

Supplementary Report of the Committee on Definitions

PREPARED BY F. A. CURTIS, FORMERLY CHIEF PAPER SECTION, BUREAU OF STANDARDS, AND C. J. WEST, CHAIRMAN, COMMITTEE ON DEFINITIONS, NATIONAL RESEARCH COUNCIL, WASHINGTON, D. C.

(Continued from last week)

COPYING TISSUE—70. A term applied to a group of tissue papers which are slack-sized, soft in texture and of considerable strength, for use in letter press work or for special manifolding purposes, such as for railroad waybill copying.

CORES, PAPER. Tubes or rolls, made of strawboard, chipboard or molded mechanical wood pulp; used as a central support for a roll of newsprint, toilet paper, towelings, etc.

CORE STOCK. Chip or strawboard wound to a desired thickness in the manufacture of paper cores, for use in rolls of paper, etc.

CORK PAPER. A heavy rope or manila paper, surfaced with a mixture of glue and powdered cork; used for packing glass, fragile articles, etc.

CORRESPONDENCE PAPER. A general term used to cover all forms of fine stationery used for personal correspondence.

CORRUGATED BOARD. A converted board, consisting of a corrugated sheet of 0.009 point strawboard or lined either one or both sides with plain straw, chip or manila.

CORRUGATED CONTAINER BOARD. A built-up board, having a corrugated center of 0.009 strawboard and lined with jute or test chipboard; the liners are fastened to the strawboard by means of silicate of soda; used in the manufacture of cartons for shipping purposes.

CORRUGATING PAPER. A term applied to paper which is to be corrugated or molded into a series of rounded ridges; generally applied to strawboard and chipboard for use in the manufacture of corrugated container board.

COTTON BATTING. A term applied to a light weight, blue wrapping paper, used as a wrapper for absorbent cotton and cotton batting; generally made of sulphite stock.

COTTON LINTERS. The short fiber adhering to the cotton seed after the staple cotton has been removed by ginning; used for upholstering and nitrating purposes; now used to a considerable extent in bleached pulp form for papermaking.

COTTON SAMPLING. White, manila or colored wrappers, made of jute, rag or chemical wood pulp; used for the display of staple cotton. *See* Sampling paper.

COUCHÉ PAPER. A coated one-side enameled book paper; used for printing and lithographing high-grade labels.

COUNTER BOARD. A pulp board, specially treated; made on wet machine and run through four stacks of calenders; used for making shoe counters.

COUNTER ROLL. A general term applied to rolls of paper of any grade to indicate that the diameter and width of the roll are such that it may be placed in a rack, mounted on a counter; the diameter of counter rolls is generally 9 inches.

COVER PAPER—4. A general term applied to a class of papers which are used principally for the protection of stitched or stapled literature, photographs, etc. These papers are generally in colors and are relatively strong and heavy and occur in many finishes and fancy designs.

CRACKER SHELL BOARD. A term generally applied to filled news, when that grade is used to make cartons for the retail sale of cakes and crackers; made of a mixed paper or chip center, with a liner on both sides made of old newspapers; generally treated with silicate of soda on both sides before being made into cartons.

CRASH FINISH. A finish resembling a coarse linen fabric; applied by plating process.

CRAYON PAPER. A drawing paper; generally a high class, heavy rag paper, tinted or plain colors; glazed on one side only; used for crayon and sepia drawings, water colors, etc.

CREAM. A term indicating the very light tints of brown.

CREAM CUPS. Small vessels made from a waterproofed board or ledger for use in serving ice cream.

CREAM LAID. An ordinary writing paper of creamy color; made on a laid wire mold or with a laid dandy roll.

CREPE PAPER. A general term descriptive of an effect simulating crepe; effect is produced by crowding the wet sheet on a roll by means of a doctor; sulphite pulp is generally used; sometimes mixed with mechanical pulp; example—paper napkins and towels; also used, especially in colors, for decorative purposes.

CREPE TISSUE. *See* Crepe paper.

CRINKLED PAPER. Paper that has been crinkled by an embossing process.

CRINKLED TISSUE. *See* Crinkled paper.

CROSS-SECTION PAPER. A writing or bond paper, ruled both ways of sheet with parallel lines at equal distances; better grades are of good map paper of smooth surface, with lines engraved.

CROWN. A size of paper 15 by 19 inches.

CRUSHED FINISH. A fancy coarse ripple finish, applied by plater press.

CUP PAPER. A printing or writing paper suitable for making paper cups; made of waxed, unwaxed or treated offset book, bond or ledger.

CURRENCY STRAPS. Thin strips of kraft, manila or dry-finish sulphite wrapping, one-half to one inch wide; used for bonding currency; in some cases ledger papers in various colors are used to distinguish the various denominations. *See* Bill straps.

CUSHION BOARD. *See* Corrugated board.

CUSPIDORS PAPER. Spittoons, molded and compressed from double-faced manila board or hard fiber stock.

CUT CARDS. Small pieces of bristols; used in commercial work for personal business cards and for advertising purposes.

CUTLERY PAPER. A light-weight brown or white anti-tarnish paper; used for wrapping cutlery and silverware.

CYCLOSTYLE PAPER. Tissue waxed paper used for cyclostyle work. *See* Stencil paper.

CYLINDER BRISTOL. A bristol board, made on a multicylinder machine by combining, by pressure when moist, two or more thicknesses or layers; may be either solid or filled; commonly called mill bristol; a one-process sheet.

CYLINDER-DRIED. A term applied to the process of drying paper, by passing it over internally heated iron rolls; process differs from pole, loft or air-drying in that moist paper is in contact with heated iron rolls or cylinders.

D

DEADENING FELT—211. The term deadening felt is applied to those felts that are used in construction for deadening sounds and under hard surface floor coverings as a protection against uneven floors. They may also be used as insulation against heat or cold.

DECALCOMANIA. A paper having a book paper base, sometimes duplex, specially prepared and coated with dextrine and starch on which designs are printed for transfer purposes in ceramic work.

DECKLE-EDGE. The rough, uneven edge of paper, as formed in a hard mold or by the deckle strap on a machine.

DECKLE-EDGED PAPER. Paper made to simulate hand-made paper, by leaving untrimmed the rough edges produced by the deckle or

by a jet of water; by a special method the rough edge may be produced on the machine on all four edges.

DECORATED BLOTTINGS—0000. A commercial blotting of solid color, on which pulp of a different color has been sprayed during the process of manufacture to decorate and to add to its attractiveness.

DECORATED BOARDS. Any board, having been decorated with a design, either lined or printed on the board itself; example, oak-grained jute board.

DECORATED COVER PAPER—400-421. A kind of cover paper that has been decorated with a design produced by embossing or any other process; may be coated or uncoated; may be decorated during or after manufacture.

DECORATIVE PAPER. A general term applied to any paper on which has been printed or produced special designs; used for decorative purposes.

DEMY. A size of paper, 16 by 21 inches.

DENTAL HEAD RESTS. Small rolls used by dentists for sanitary purposes, on the head rests of chairs; usually made of white news, book or toweling.

DENTAL SANITARY PAPER. Absorbent paper used for dental purposes.

DETAIL DRAWING PAPER. A manila-colored drawing paper, slightly rough or grained, for detail or working drawings from which drawing is transferred to tracing cloth or paper.

DESIGNERS' PATTERN PAPER. Kraft or manila wrapper, used in pattern work; plans are laid on the floor and structure built to the plans; paper should be strong.

DIAPERS, PAPER. Napkins of soft white tissue paper, made more or less absorbent; used as the name implies.

DIE CUT CARDS. Cards (may be cheap translucent but often of a better quality of boards) that are cut or stamped out by a steel die, and used for advertising purposes.

DIE WIPING PAPER. A heavy wood manila wrapping paper, highly finished, in rolls; used for the cleaning of dies or plates.

DIRT. The small particles of foreign matter appearing in a sheet of paper; not necessarily earth matter but also such as particles of metal, rubber and vegetable matter which have passed through the screen with the stock.

DISCS, PAPER. *See* Circles.

DISH CLOTHS, PAPER. Sheets of vegetable parchment, cut to desirable sizes; for use in wiping dishes, etc.

DISHES, PAPER. Receptacles made to resemble different clay product dishes; made of chip board and tag board; may be waterproof.

DISPLAY NOVELTIES. A term applied to articles made of paper or boards for advertising purposes.

DOBBY BOARD. *See* Binders board.

DOCUMENT BOARD. A heavy solid board, made of rope, jute, sulphite or mechanical pulp; used for file folders, freight car records, etc. *See* Document Manila.

DOCUMENT ENVELOPES. Envelopes manufactured especially for enclosing documents, pamphlets, etc.; unusually made of heavy manila stock.

DOCUMENT FILES. Document manila, cut to desired sizes for special uses in the filing of documents. *See* Document manila.

DOCUMENT GUIDES. Separator guides in filing cabinets, made of document manila and cut to sizes required.

DOCUMENT MANILA. (a) A heavy solid board of rope, jute or sulphite pulp; also a heavy rope wrapping paper; used for various purposes in connection with documents.

(b) A term usually applied to sizes of paper, 24 by 36 inches or larger.

DODGERS. Colored or white news print, used in small sizes and bearing advertising matter, for hand distribution.

DOILIES, PAPER. Napkins or small mats for table use, cut in various shapes out of white sulphite bond or book paper and die-cut or embossed with special designs.

DOLLS, PAPER. Any heavy paper or board, cut and used in the form of paper dolls; usually printed.

DOUBLE CAP. A size of paper, 17 by 28 inches.

DOUBLE COATED. A paper or board, having a heavy coating (not necessarily two coatings); especially adapted for use in printing from 200 line screen cuts.

DOUBLE COATED PRINTING PAPER.—600. A kind of printing paper, coated on one or both sides with a heavy coating of clay and used for printing or lithographing from fine screen cuts.

DOUBLE DEMY. A size of paper 21 by 32 inches.

DOUBLE DEMY, OBLONG. A size of paper, 16 by 42 inches.

DOUBLE DOUBLE CAP. A size of paper, 27 by 40 inches.

DOUBLE DOUBLE CAP. A size of paper, 28 by 34 inches.

DOUBLE ELEPHANT. A size 27 by 40 inches.

DOUBLE FEATHER EDGE STRAW BOARD. A strawboard having its edges thinned to permit its use in small tubes or rolls, so that when pasted, it will have a smooth pasted surface, without a perceptible ridge.

DOUBLE FLAT FOOLSCAP. A size of paper, 16 by 26 inches.

DOUBLE FOLIO. A size of paper, 22 by 34 inches.

DOUBLE MANILA LINED CHIP BOARD. A chipboard, having a vat-lining of manila on both sides.

DOUBLE MANILA LINED NEWS BOARD. A new-filled body stock, with manila liner on both sides.

DOUBLE MEDIUM. A size of paper, 23 by 36 inches.

DOUBLE MEDIUM, OBLONG. A size of paper, 18 by 46 inches.

DOUBLE ROYAL. A size of paper, 24 by 38 inches.

DOUBLE THICK COVER PAPER. A term applied to a heavy cover paper, made of two sheets of regular weight cover paper, pasted together.

DRAB. A term applied to paper that is brown in color.

DRAB SEALING PAPER. *See* Sealing wrapper.

DRAFTING PAPER. A very high grade drawing paper; finish slightly higher than ordinary; surface very hard; extra hard sized; adaptable to pen and ink work as well as pencil; erasure superlative; ink must not spread when applied to erasure; used for original drawings of permanent record.

DRAWING BOARD. A heavy bond or bristol board, made by pasting together three or four sheets of paper with hard smooth surfaces and pure white color, but often India color; used for pen and ink drawings to be photographed, from which printing plates are made.

DRAWING PAPER.—912. A kind of writing paper of close texture; firm surface; not unpleasant to the touch but with sufficient tooth or grain to take quickly lead pencil marks; finished slightly, without sheen or gloss; good erasing quality; hard sized.

DRINKING CUP. A receptacle used for temporarily holding water; made in rigid cup form, or flat, resembling small envelope; made of bleached sulphite, generally paraffined on one side; essentially a ledger or offset book paper.

DRUGGISTS WRAPPING. Small rolls of wrapping used by druggists; term is generally applied to a white and colored sulphite bond; sometimes a wood manila; may be specially decorated.

DRY FELTS. *See* Saturating felts.

DRY FINISH SULPHITE WRAPPING.—870. A kind of sulphite wrapping paper, made wholly or principally of sulphite pulp, with an unglazed surface.

DRYING PAPER. Strong tough bag or wood pulp paper of medium thickness; unsized and absorbent; used for letter press, copying books and similar purposes. *See* Interleaving Paper.

DRYPROOFING PAPER. An absorbent light-weight paper or tissue; used for making first proofs of printing or plates.

DULL COATED PRINTING PAPER. A kind of coated printing which has not been given a high finish by calendering.

DULL FINISH. A term used to indicate a smooth surface which lacks shine or gloss; a low finish; applies to coated paper to indicate a natural finish without calendering or gloss.

DUMMY. A preliminary form of a booklet or catalog.

DUPLEX BLOTTING.—0001. A commercial blotting, made by past-

ing together two sheets of plain blotting of different colors; both sides are absorbent, thus differing from enameled blottings.

DUPLEX BOARD. Board made on a multi-cylinder machine, having different colors on the two sides.

DUPLEX PAPER. A term applied to paper having one color on one side and another color on the other side; sometimes applied to machine glazed paper because of the high finish on one side and the rough finish on the other; also applied to a paper made of two layers of different stock or material.

DUPLEX WRAPPING. A wrapping paper having surfaces of different distinctive colors or a glazed surface on one side and a rough finish on the other, such as a machine glazed wrapping.

DUPLICATIG PAPER.—91 A general term descriptive of a group of light-weight writing papers, such as onion skin and manifold papers, that are used for duplicating purposes.

DUPLICATING TISSUES. A general term descriptive of tissue paper used for duplicating purposes.

DYNAMITE PAPER. *See* Blasting paper.

E

EASEL BOARD. A term applied to any heavy board or blank suitable for easel purposes; patent coated folding box board most commonly used.

EASTERN M. F. BOOK. A term applied to book papers made of sulphite and soda, as distinguished from all sulphite, mechanical pulp, or magazine base paper; once made only in eastern mills—hence the designation; term now practically obsolete.

EGG CARRIERS. Corrugated shipping containers with skeleton frame on inside to hold eggs in position and protect them from breaking in transit; made of egg-case filler board; used principally for parcel post shipments.

EGG CARTONS. Small boxes made of manila-lined chip with chipboard dividers; used to pack eggs for local delivery.

EGG CASE FILLER BOARD. A term applied to a board used in making egg carriers; strawboard filler used for domestic use; filled pulp board used for export shipment.

EGGSHELL BOOK PAPER.—6111. A kind of book paper possessing a finish resembling that of an eggshell.

EGGSHELL FINISH. A term applied to book paper and boards, with a dull, rough finish resembling the surface of an eggshell; some what similar to antique finish.

EGG TRAYS. Trays made of strawboard; used to separate eggs in regular egg crates.

ELECTRICAL CABLE FILLING PAPER. *See* Cable paper. *See* Insulating paper.

EECTRICAL CONDUIT TWINES. *See* Cable paper. *See* Insulating paper.

ELECTRIC BOARD. A hard fiber board; used for insulating purposes such as electric switch blocks and boards, etc.

ELEPHANT. A size of paper, 23 by 28 inches.

EMBOSSED. A term applied to paper upon which a raised or depressed design has been formed by means of special steel rollers, the surface of which has been cut to a particular pattern; used for decorative effect and generally applied to book, blotting, cover and wall paper.

EMBOSSED BLOTTING.—0002. A commercial blotting paper that has been embossed for decorative effect.

EMBOSSED COVER PAPER.—442. A kind of uncoated cover paper that has been embossed, by special design cut in steel rollers, for decorative effect.

EMBOSSING PAPER. A book or cover paper suitable for embossing. *See* Embossed.

EMERY PAPER. *See* Abrasive paper.

EMPEROR. A size of paper, 48 by 72 inches.

ENAMELED. A general term descriptive of a surface produced by a coating with clay or some mineral, like zinc white, and highly polished; such as enameled book, cover, blotting, etc.; used for box covers, for fine line half-tone work and for illustrative printing.

ENAMELED BLOTTINGS.—0003. A commercial blotting paper, to which a coated or enameled paper has been pasted, thus forming a smooth and solid surface for printing and lithographing; coated side is not absorbent; used largely for advertising purposes.

ENAMELED BOOK PAPER. *See* Enameled. *See* Coated.

ENAMELED POST CARD. A medium weight cardboard single or double coated one or both sides; used for souvenir postal cards and similar work where high finish is desired.

ENAMELINE FINISH. A term applied to a paper resembling in finish an enameled book.

END LEAVES. *See* End papers.

END PAPERS. The several odd sheets, placed at front and back of the binder in books; generally called fly leaves.

ENGINE-SIZED. A term applied to papers that have been sized in the beater; usually refers to the use of rosin size; the fibers are sized before being formed into the sheet of paper.

ENGLISH FINISH. A special finish, given to book papers; between regular machine and supercalender finishes; produced by the paper machine calenders.

ENGLISH FINISH BOOK PAPER—6112. A kind of book paper, finished on the paper machine with a surface between that of the machine-finish and a supercalendered finish; a high machine-finished book.

ENGLISH OPACITY. Refers to opaque book papers, similar to those obtained by the use of esparto.

ENGRAVERS' BRISTOL. A high grade bristol the quality and finish of which is especially suitable for engraving.

ENGRAVERS' PROVING PAPER. A kind of double-coated, one side, highly polished book paper; used principally for taking proofs of engravings.

ENVELOPE PAPER. A general term, descriptive of paper suitable for making envelopes; should be strong, opaque for commercial purposes, with good folding endurance and writing surface, and lie flat without curling; manila, rope, kraft, writing, bond and ledger papers used for this purpose.

ENVELOPE STUFFER. Any printed piece, as a small circular, which is enclosed with letters in an envelope.

ESPARTO PAPER. A term given to paper, generally of European manufacture, made in whole or part of esparto pulp; specially adapted for printing and magazine purposes.

ETCHING BOARD. *See Drawing* board.

EXPANDING ENVELOPES. Envelopes made of heavy strong wrapping paper, possessing folding endurance; constructed to permit an expansion in the enclosure space, similar to a bellows; used for filing legal briefs and documents.

EXPRESS WRAPPING. A general term applied to a high water-finish sheet of heavy wrapping paper; used for wrapping large and bulky packages; grade depends upon the strength required; it may be a bogus, or wood manila, a sulphite or a sulphate.

EXTRA FINE WRITING. An extra grade of fine writing, firmer and stronger, even at a slight sacrifice of beauty.

F

FABRICS PAPER. *See* Paper textiles.

FACING PAPER. Light-weight paper, such as fancy covers, book and manila; used to paste on a board filler to give smooth and attractive surface.

FAVORS. Trinkets made of various grades, colors and finishes of paper and used as souvenirs.

FEATHER EDGE DECKLE. A term applied to papers made with a thickness tapering from that of the body sheet to edge; used on fire works papers, so that when rolled, the outer edge will paste down smoothly.

FEATHERWEIGHT. A general term indicating light weight, used in connection with such papers as light-weight bulky book paper, thin opaque writing paper made largely of soda pulp and light-weight tissue.

FEEL. A term referring to that characteristic of a sheet of paper

which is obtained by contact with the fingers; it is a method of judging the finish and general quality of paper.

FELT BROWNS. A term sometimes applied to carpet felts.

FELTS—21. A group of bulky, rough and cheap building papers; felts are ordinarily distinguished from sheathing papers in that they are more loosely formed and thicker.

FELTS, DEADENING. *See* Deadening felts.

FELT SIDE. The smooth side of a sheet of paper, as distinguished from the wire side; refers to the side of the sheet which is not in contact with the wire during manufacture.

FELTS, SATURATING. *See* Saturating felts.

FENDER BOARD. A board made of hard fiber or rag stock; used as a wood substitute; also used by woolen mills in their presses when finishing cloth by the press process.

FESTOON DRIED. Air-dried, by means of a method wherein the paper is hung in a single continuous web, in short festoons or loops on traveling poles or slats, moving through a loft or drying room; controlled for temperature and humidity; subsequently seasoned and conditioned before finishing. This term is applied to the drying of paper after coating, to wall paper after printing and to roofing felt or paper after saturation or coating.

FESTOONS, PAPER. Strips or bands made of white and colored, light-weight papers; used for festooning or other decorative purposes.

FIBER. A term applied to that constituent of vegetable growths known as cellulose.

FIBER BOARD. A board, made wholly or largely of primary fiber stock, giving a product that is tough, pliable, waterproof and capable of being molded; used chiefly for shoe counters and inner soles.

FIBER LEATHER. *See* Feather board.

FIBER PANELS. Panels made of cloth board or hard fiber.

FIBER PAPER. A loosely used term, referring to paper made of long fibered sulphite or sulphate pulp; also refers to hard or vulcanized fiber.

FIBER RUGS. Rugs made of grasses, straws or twisted paper.

FIBER SHIPPING CONTAINERS. Cartons made of jute board and other similar stock; either solid or corrugated.

FILE BACKS. A piece of tag board or document manila; used as a protection or backing for a file of correspondence or forms attached to it.

FILLED JUTE BOARD. A combination board, vat-lined with jute, sulphite or sulphate pulp, having for a filler a grade of stock inferior to its surface. *See* Combination board.

FILLED NEWS BOARD. A board having a news stock liner on both surfaces, with a filler of some other stock. *See* Cracker shell board.

FILLED PULP BOARD. A board lined on both surfaces with wood pulp facing and with a chip or news stock center.

FILLED WOOD PULP BOARD. *See* Filled Pulp Board.

FILLER BOARD. The center of any mixed paper or chipboard, where the liner is of different stock than the body.

FILTER PAPER—.01. A porous, absorbent paper, used for filtering liquids in the laboratories or in the plant, for drying crystals, etc. Ordinarily made of rags or chemical woodpulp, but better grades made of selected rags; quantitative filter paper is acid-washed (hydrochloric and hydrofluoric acids).

FINE PAPERS. A class of high-grade papers, such as bonds, linens, ledgers, writings, etc.; distinct from coarse papers.

FINES. *See* Flats.

FINE WRITINGS. *See* Flats.

FINGER BOWL LINER. An article made of sulphite pulp, specially sized to conform to shape of a finger bowl and used as a liner in the bowl.

FINISH. A term used in referring to the surface characteristics of a sheet of paper or of a board.

FIREPROOF PAPER. A general term descriptive of paper which has been treated to render it fire resisting.

FIREWORKS PAPER. A heavy bogus wrapping or light-weight chipboard; used in the construction of fire-works. *See* Candle paper.

FISH PAPER. A term applied to a chemically treated board; used as a non-conductor of electricity as insulation in building dynamos and motors.

FLAT CAP. A size of paper 14 by 17 inches. Also called Cap.

FLAT FOOLSCAP. A size of paper 13 by 16 inches.

FLATS—901. A kind of writing paper in which beauty of formation is the dominating characteristic; short-fibered, close formation, fine grain and texture; generally high-finish, firm, but not excelling in bursting or tearing strength; usually wove, but may be laid; white and colored.

FLAT WALLETS. Specially constructed envelopes with pockets; made of heavy rope stock.

FLAT WRAPPERS. A general term applied to sheet paper, to be used for wrapping purposes, which is put up in bundles of flat sheets instead of quire fold or interfolded.

FLEXIBLE COVER. A cover paper that is designed to be flexible; used for book covers, pocketbooks, etc.

FLINT GLAZED. Term indicating a method of giving a high finish to paper; originally derived from the practice of glazing one side coated papers with smooth flints.

FLINT PAPER. *See* Abrasive paper.

FLORISTS' POTS. A small vessel, used for temporary potting of plants and germinating of seeds; made of light-weight chipboard or screenings stock.

FLOUR SACK PAPER. Strong, heavy wrapping paper made of rope, jute or sulphite; suitable for packing flour.

FLOUR SACKS. A bag suitable for the packing of flour; made of heavy strong rope, jute, or sulphite.

FLOWERS, PAPER. Imitation flowers, made of white and colored tissue and light-weight writings of good quality; used for decorative purposes.

FLY LEAF. *See* End paper.

FLY PAPER. A strong rope, manila, or jute-like wrapping paper, coated on one side with a sticky substance impregnated with arsenic, quassia bark or similar poisonous material; used for catching flies.

FLYERS. (FLIERS.) A term applied to small pieces of distributing matter, used by theatrical attractions for distribution in theaters during the performance for attractions, from ten days to two weeks in advance of the one advertised; also used for distribution from door to door or any other method that a showman can think of to attract possible trade. Dodgers and fliers are anything from 2 to 3 inches in size up to 8 by 10 or 9 by 12 inches; heralds are usually larger, generally applying to sizes of from 8 by 10 and 10 by 12 inches up to 10½ by 28 or 14 by 42 inches.

FOIL. Paper, coated with aluminum, tin, copper or zinc; used for packing, decorative purposes or often for wrapping candy.

FOLDED WRITINGS. Writing papers in various note and letter sizes as well as foolscap and legal sizes that have been folded once.

FOLDER. (a) A circular or other piece of direct advertising, folded; frequently folded in an unusual manner in which the printed matter is confined to the space within, never across the folds.

(b) A manila sheet, folded once and used for filing purposes.

FOLDER STOCK. A manila bristol, made of mechanical pulp, sulphite or rope stock; used for file folders.

FOLDING BOXBOARD. (a) A coated boxboard, with a base of mechanical pulp or newsboard; flexible and suitable for fine grade of folding boxes; printed or lithographed.

(b) A term used to indicate any grade of board that can be made into folding boxes without breaking or cracking.

FOLDING BRISTOL. Board of the bristol type, but with longer and more flexible fibers to make folding possible.

FOLDING SATIN. A cheap grade of stock resembling translucents, but with a manila or dark base; particularly adapted for folding purposes.

(*To be continued*)

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

CLARENCE J. WEST, Chairman.

Qualitative and Quantitative Difference Between Some Wood and Straw Lignins. Ernst Beckmann, Otto Liesche and Fritz Lehmann. *Biochem. Z.* 139, 491-508 (1923). This work is a detailed investigation of the nature of wood and straw lignins isolated by alkali treatment at different temperatures. The straws investigated were those of rye, barley, oats and rice and the woods, maple, red beech, fir and spruce. In each case the straw or wood was dried in air, ground to a meal and after removal of the resins, fats and waxes by exhaustive ethereal extraction, equal quantities of each meal were subjected to the action of 1.5 per cent sodium hydroxide in a series of consecutive extractions as follows: (a) 48 hrs. at room temperature, (b) 6 hrs. boiling in a reflux apparatus, (c) 6 hrs. in an autoclave at 3 atmospheres, (d) 6 hrs. at 6 atmospheres, (e) 6 hrs. at 9 atmospheres. Methods (d) and (e) were required only in the cases of the woods. The completion of the extraction was indicated by the destruction of the fibrous structure and the absence of red coloration with phloroglucinol hydrochloride. The lignins extracted in each method were isolated by Beckmann's process and methoxyl estimations were made on each sample. In successive extraction methods, the straws gave diminishing yields of lignins, which became increasingly darker and less soluble in pyridine, acetic acid, or alcohol as the temperature of the extraction rose. The methoxyl content was at a maximum in those isolated by method (b). The woods yielded increasing amounts of lignins in successive extractions up to method (d), at which the methoxyl content was also, in general, at a maximum. The two pine woods gave markedly uniform results, but more variation was encountered in the deciduous woods and the latter contained less lignin of a higher methoxyl figure than did the former. As in the case of the straw lignins, increasing temperature of extraction gave products of a darker color and of more restricted solubilities in basic, acid or neutral solvents. In all cases the total lignin extracted was less than that estimated to be present in the original material by Willstätter's method, the difference being accounted for by experimental losses and the presence of silica in the straws (more especially in rice straw). A series of experiments on maple wood meal was carried out in which each method of extraction was continued until no further lignin was obtained before the next method in the series was employed. Methods (c), (d) and (e) were capable of removing all the extractable lignin but this was still further found to be less than the total in the original material. Parallel extractions of maple wood meal with 1.5 and 3 per cent sodium hydroxide showed the more concentrated alkali gave higher yields of lignin but the appearance and methoxyl content of corresponding fractions were the same. The lignins of winter rye straw at different periods of growth were investigated by these methods. The lignin content and the methoxyl content increase with the age of the plant, the increases being more marked in the earlier stages of growth. The results are given of various elementary analyses of the lignins isolated as above described, and in a chemical examination of their decomposition products the presence of protocatechuic acid, pyrocatechol and pyrogallol was revealed. As a result of demethylation of a rye lignin by hydriodic acid, a dark brown, resinous substance was obtained to which the empirical formula $C_{36}H_{39}O_8I$ is provisionally ascribed. Maple and pine wood lignins on demethylation gave similar but more complex substances. No definite conclusion is drawn from the results of various experiments designed to elucidate the phloroglucinol reaction of native lignin.—C. J. W.

Lignin

The Lignin Content of Sruce. P. Klason. *Svensk Pappers Tid.* 26, 319-322 (1923). According to Euler the percentage lignin in spruce as determined by Klason should be raised 3 per cent. Klason reports the composition of spruce as: cellulose (free from pentosan) 53 per cent; hemicelluloses, 15 per cent; lignin, 30 per cent; fats, proteins, resins, etc., 2 per cent. Lignin contains acetyl complexes amounting to 2 per cent of the dry weight of the wood. Klason discusses the priority of the sulphuric acid method and describes it in detail. A high concentration of sulphuric acid requires very thorough washing of the precipitated lignin. Best results are obtained with 61 to 68 per cent acid. Lignin determined by the sulphuric acid method is 28 per cent, agreeing closely with Hagglünd's result by the hydrochloric acid method. Lignin, free from ash, contains C, 63.97; H, 5.32; pentosans, 1.70 per cent. An 80-year-old spruce gave 29.5 per cent lignin, while a hundred-year-old spruce gave 26.6 per cent. Euler calculated the lignin content on wood extracted with alcohol-benzene. Klason calculates it on wood dried at 98°, the fat and resin being separated with the lignin. Wood contains less water at 98° if the resin has been extracted than if present. For example, pine lignin gave 5.8 per cent resin when extracted with alcohol and pine wood 5.7 per cent when extracted directly with petroleum ether and then with ether. When 5.8 g. of pine were heated with alcohol in a closed vessel for 4 days at 98°, 8.2 per cent fat and resin was obtained. Alcoholic resin gives a strong lignin reaction and compares with the lignin in ligninsulphonic acid. It consists of about equal parts of carbohydrates and lignin, determined by dissolving the fat and resin from the alcoholic resin with benzene, treating the residue with hydrochloric acid and Fehling's solution and determining the percentage carbon (63.8) in the hydrochloric acid insoluble portion. Klason discusses the probable explanations for the action of alcohol on dry wood; also the possible errors in Euler's selection of wood disks.—C. J. W.

Lignin Prepared by the Hydrochloric Acid Method. Erik Hagglünd. *Cellulosechemie* 4, 73-77 (Sept. 30, 1923). A method is described for the rapid preparation of lignin from wood with 45 per cent hydrochloric acid. As prepared from pine and spruce woods lignin contained about 4 per cent pentosan. The pentosan from spruce lignin was identified as araban and was present to the extent of 4.5 per cent. Alkali fusions of lignin gave protocatechuic and formic acid; neither exalic nor acetic acids could be detected. The copper number of the lignin was 7.95, and its elementary composition freed from carbohydrates, was $C_{11}H_{14}O_3(OCH_3)_2$. Carbohydrate-free lignin, in pine wood, contained 15.2 per cent methoxyl, and is present, in both spruce and pine, to the extent of 27.5 per cent.—J. L. P.

The Pentosan Content of Lignin. Emil Heuser. *Cellulosechemie* 4, 77-78 (Sept. 30, 1923). Polemic against Hagglünd's article in the same issue. The view is taken that pentosans are not chemically combined with either the lignin or the cellulose. The pentosan content of lignin is not a constant value but varies depending on the conditions of treatment.—J. L. P.

C. W. Cox, pulpwood contractor of Port Arthur, Ont., recently made a trip across Lake Nipigon in his automobile, a distance of 120 miles and is now operating a daily service by the auto to his camps where he has one hundred and fifty men employed.

Section of the

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THE TRADE ASSOCIATION AND ITS PLACE IN THE BUSINESS FABRIC*

By Richard Arnold May.

The fact that of late trade associations have become a topic of earnest discussion among the American business public and students of business and political economy has not been due so much to any radical changes in their significance in the business fabric, or their activities, as to unusual Governmental interest. Trade associations—not all, but a representative few—have been before the courts of justice recently in searching investigations of their activities. Have they been guilty of restraint of trade and restriction of free and open competition? This is the question the executive and judicial branches of the Government have been asking. Other Government departments, notably the Department of Commerce, approaching the problem from another angle, have been investigating trade association constructive activities with the purpose in mind of setting up such activities as a guidepost to better business.

Members of a trade or branch of industry have combined into associations of one sort or another for centuries. History has told us of the old-time organizations of craftsmen, the "merchant guild" and the "craft guild," the former the antecedent of the trade association, the latter of the labor union. The mediaeval guild was despotic, wielding absolute authority over its members in all important activities, even to the fixing of prices. Out of the merchant guild grew the so-called "pool." Like its predecessor, the pool was economically unsound and nowadays would be legally impossible in the United States. Among the asknowledged practices of the early guild and pool were price fixing, restriction of supply, and maintenance of monopoly for the complete control of distribution.

About the middle of the nineteenth century, associations such as exist today grew out for the most part from the pools which had given way to more closely knit and more efficiently operated trusts. Thus some of the early trade associations were very much like the trusts, not alone in organization, but in declared purposes and activities. There were a great many mixed motives in the establishment of these old associations, and sometimes, if not usually, their activities were such as would be distinctly illegal today. In time, Federal anti-trust legislation was enacted, first hitting hard at the old trusts and later striking at those trade association practices which were in principle identical with the more malicious trust activities. The scope of trade association activities gradually, and in some cases suddenly, shifted.

Thus, the trade association traces its lineage and appears today as the resultant of an impelling force several centuries old, demanding co-operative, industrial, and commercial action. Fundamentally, the present-day trade association is very different from its forebears in that it recognizes that most peculiarly American characteristic—individualism. The individualism of the trade association member, manufacturer, or merchant, is recognized, preserved, and allowed complete freedom. The association and its co-operative functions are subordinate and auxiliary to the individual and his established business practices. Thus at one and the same time, free competition exists and the trade association maintains its separately identified position of importance in the business fabric—co-operative effort in the constructive development of its industry or trade. Regardless of its legal status, and it must have one, the trade association has a very real economic status which cannot be denied or ignored.

Some 1,400 national associations of varied purpose and activity are indicated in the Department of Commerce's biennial lists of commercial and industrial organizations. By classifying these associations first, according to commodities or services, and second, by functions, it is possible to ascertain the approximate number of strictly *trade* associations in America. Of course, this would be presuming that trade associations are national in scope. The lists indicate that there are the following national trade associations: Agricultural producers, 37; industrial producers, 417; importers and exporters, 17; jobbers and wholesalers, 70; retailers, 28, and federated industry, 15. Omitted are associations whose major functions are more narrowly confined within single specific fields of activity such as education, sales promotion, science and engineering, art, accounting, advertising, banking, credit, labor relations, insurance, transportation, and associations combining the interests of several otherwise unrelated industrial or trade groups. These rather startling aggregates certainly substantiate the statement that the trade association has come to be a real force in the business community. In the ultimate analysis, every association that exists today must have some economic reason for its original establishment and present existence, and the chances are that more associations will come into existence so long as there remain constructive problems for business men to study and solve co-operatively with consequent benefit to themselves, industry and commerce in general, labor, government, and the public.

The classification of national associations by the Department of Commerce just referred to was made in an attempt to differentiate bona fide trade associations from other associations. "Trade association" has been always a most generic title and has conveyed but hazy impressions and only such impressions as the public, the

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press, the Government, or business itself gave as contingencies suggested. As a matter of fact, no one has ever understood very definitely just what comprised a modern trade association, and even today the line of demarcation is not clearly defined.

The Association of Trade Association Executives at its 1922 Convention, after much discussion, adopted a definition in part as follows:

"A trade association is an organization of producers or distributers of a commodity or service upon a mutual basis for the purpose of promoting the business of its branch of industry or commerce and improving its service to the public. Among the methods now in use for accomplishing this end are the compilation and distribution of information, the establishment of trade standards, and the co-operative handling of problems common to the production or distribution of the commodity or service with which they are concerned."

The following types of associations are frequently mistaken for trade associations:

1—Associations with a membership consisting of business houses engaged in a variety of businesses, as, for instance, an association of manufacturers of miscellaneous commodities not connected with a specific industry.

2—Professional and technical societies consisting of individuals in their professional or technical capacity, rather than business units, such as societies of credit men, accountants, sales and advertising managers.

3—Non-mutual associations, in which any surplus of income over expense is neither returned to the members, nor used directly or indirectly to increase the service to members.

4—Associations organized for a single purpose, or a limited number of purposes, such as associations of manufacturers which are traffic service bureaus.

The purpose and aim of a trade association, then, is to deal with all questions of *general* application in the branch of industry or commerce it serves and so to develop its field that the enterprises in it may be conducted with the greatest efficiency and economy. It naturally follows that the membership of a trade association must be sufficiently representative to enable the association adequately to cope with all common problems and to speak with authority for its industry or branch of business.

Trade association activities may be hypothetically divided into those that are good and those that are bad—that is, those which are constructive and of real benefit to the entire industry or trade and distinctly of public value and interest and those which are competitive and carried on in the selfish interest of the individual, firm or group, of little or no public interest and value and of questioned legality or specifically illegal. By way of comment, the latter are most often ramifications of those practices referred to earlier as underlying the trade association of half a century ago. Fortunately, trade association activity of both sorts is spread over a sufficient span of years to permit segregation of specific activities with an eye to analysis and interpretation.

Among trade association practices which may usually be considered as distinctly constructive are such fundamental, long-time interests as commercial and industrial research and their parallel forces, simplification and standardization. Constructive activities of a more restricted nature are the study and installation of cost accounting systems, credit and collection functions, insurance and transportation problems and investigation, and legislative study and guidance. Beyond these there lies the vast field of commercial statistics with specific reference to the association's own industry or trade. Let us examine these activities, one by one.

Commercial Research

The basic facts of business—statistical or non-statistical—are being constantly more and more sought out in the solution of present-day problems. The trade association—the only agency representative of its own business group—offers the most plausible medium for specific and continued commercial research. In a broad way, the trade association is essentially a research organization—a clearing house for information of value of and to its own industry or trade, and a medium for turning the experience of all its members into collective benefit for the whole. The Institute of American Meat Packers has laid out perhaps the most inclusive research program ever undertaken by any industry.

The several more important phases of trade association commercial research activity are worthy of specific mention. First of all, let us take general trade information services. These services comprehend the systematic and thorough collecting, compiling, and disseminating of all kinds of data—statistical or otherwise—likely to be of current or permanent value. Essentially the association becomes the fact center for the membership. In character, this work may be simply information, limited to the systematic collection, presentation, and dissemination of data; or it may go further and become interpretative, assigning causes and discussing probable effects of specific events and trends. In its ultimate development it is analytical, undertaking the study of specific problems, analyzing thoroughly all the factors entering it, making comparisons, and arriving at prognoses and conclusions.

In its commercial research program the association measures success according to its ability to get down to fundamentals. For example, What is the relationship between supply and demand of raw materials or finished products; Is the industry over-productive? Or has such a condition come about only in the war, and immediate post-war, years? An example of association activity in developing new uses and new markets for a product is the Copper and Brass Research Association. In this instance the producers unitedly faced the post-war conditions which threatened the copper and brass industries. They were expanded to take care of war-time emergencies, and, in order to preserve efficiency of production, the association set about to discover and develop new uses for their products in order to maintain consumption as far as possible on a parity with production. If production is in line with and just about adequate for domestic and export demand, is it as economical as possible? How about plant location and layout, raw material supply, and utilization of by-products? It may be true that such investigations require expert engineering knowledge and equipment, but are these not real fields for association research endeavor? Preliminary investigation and groundwork in such problems can often be set under way by the trade association at small expense and to great advantage.

Industrial Research

Industrial research is scientific or technical investigation involving manufacturing processes or materials. As such it has been developing for generations mostly under the patronage of private business and educational and scientific institutions. American industrial leadership has been achieved mainly through improvements in processes and products as exemplified in mass production at minimum cost.

Among constructive activities of trade associations, none is more fitting or more profitable than scientific industrial research. A recent survey indicates that approximately 70 trade associations are concentrating upon industrial research and are investing sums up to $100,000 annually. Very often industrial research problems have been approached and solved first in individual plants or laboratories—commercial, governmental, or academic—but it is becoming more and more apparent that there are problems of common interest which are so fundamental or of such broad application that the resulting data interest all manufacturing establishments within and without the industry, and should, therefore, be approached co-operatively through the agency of the trade association.

Simplification and Standardization

Simplification and standardization programs are outstanding examples of constructive trade association activity, involving the

elimination of tremendous economic wastes in production and distribution and consequent tremendous savings to business and the public. It has been estimated that the adoption of dimensional standards in the automobile industry, for instance, entailed a saving of $750,000,000 in 1920 alone.

Simplification and standardization are not one and the same thing, and since in the lay mind neither is, as a rule, clearly understood or differentiated from the other, the following comments are made. Generally, it may be regarded that simplification is the elimination of excess dimensions, types, and qualities of a specific article of commerce by mutual agreement between producers, distributers, and consumers, such agreement usually being based on a statistical study of pertinent data and not on technical research. Perhaps it would be well to proceed on the basis that, so far as commercial and industrial purposes are concerned, standardization generally involves technical or scientific laboratory research, while simplification does not. In other words, the layman can proceed successfully with a simplification program, while it would be impossible for him to consider seriously standardization problems by himself.

The development of trade association activity in respect to simplification and standardization is practically in its first stages. The advantages to be gained therefrom and the proper organization of members and non-members in order to bring about simplification and standardization eventually mean the elimination of waste in thought, effort, and materials for the industry and the entire public.

Standardization and simplification programs carried through thus far by trade associations have been accomplished most successfully with the direct co-operation and assistance of outside organizations. Among these are the various bureaus of the Department of Commerce, the Mellon Institute of Industrial Research, the Bureau of Mines, the Institute of Industrial Research, the engineering societies, and many other agencies of a similar governmental or public nature.

Cost Accounting

As yet, the determination and inauguration of uniform or scientific cost accounting systems by trade associations have developed almost exclusively within associations of manufacturers, and so far, wherever installed success has been possible only where some benefit has accrued to the industry as a whole. The Harvard Bureau of Business Research has done pioneer work in the inauguration and installation of cost systems for trade associations of distributers, such as hardware dealers, druggists, grocers, and boot and shoe dealers. Among the industries which have developed cost systems most extensively are paper, paint, and printing, each of which has operated through special subsidiary cost associations or a special department of the trade association itself.

A study of the cost-accounting history of the various associations shows that the problem has been approached from various angles, but almost invariably the conclusion arrived at has been that whatever cost-accounting method be adopted, it must be adapted to both the large and the small member, economical to operate, and simple of comprehension. Particular emphasis has been laid on the small-production unit. Some associations have prepared detailed forms in connection with cost methods; others have contented themselves merely with setting up a uniform determination and distribution of cost elements, leaving details of adaptation and installation to the individual members.

In the promotion of uniform cost systems, associations have been warned against fixing arbitrary uniform costs as to any item of expense. The Attorney General has said that it is as clearly a violation of the law to agree upon the cost of an item which constitutes a substantial part of the total cost price, when its cost actually varies, as to agree upon the sales price, because the sales price is substantially affected by such agreement.

Legislative Activities

Among the constructive activities of trade associations, legislative activities can be mentioned without any hesitation, for the public mind should not nowadays associate them with so-called "lobbying" in its old objectionable sense.

A trade association is peculiarly well fitted to collect, digest, and present facts upon which legislation affecting the industrial or commercial group it serves may be predicated. It is also in a position to discourage the enactment of laws that would be inimical, unwise, or manifestly unsound. Acting for and representing a comparatively large number of correlated units, with unusual sources of information at its command and voicing the consolidated mind of its membership, the trade association is accorded a consideration in legislative matters that is infrequently given to the individual.

In turn, trade associations have recognized the advantage of being the authorized agency within their industries or trades to which Federal and State legislators can turn for assistance and advice. In the enjoyment of this confidence, however, they have found it necessary to take up questions of fact which can be determined only by internal investigation of their memberships, and to make extensive and detailed surveys, which in other circumstances would not have been made. Industrial and commercial interests, as a whole, have profited by these necessary efforts.

If in no other way, legislative activities of trade associations certainly have proved of direct benefit to the public as well as to industry and commerce in the enactment of uniform state legislation. Take for example the automobile laws, the factory insurance laws, and hundreds of other evidences of former or present-day uncoordinated, divergent legal limitations in the several states. Among trade associations which have been real forces in the adoption of such uniform state codes is the National Automobile Chamber of Commerce.

Credit and Collection Activities

Some associations have reported their credit activities as extending only to the collection and dissemination of information relative to Federal and State laws dealing with collections, bankruptcy, conditional sales, and the like, and of proposed changes in such laws. Others maintain credit bureaus equipped to supply promptly credit information which, taken with or without the information obtained from mercantile agencies, forms a reliable basis of credit, and to these some add a collection service.

Some such associations have gone so far as to establish a system for the daily checking of members' credit accounts. All available information regarding various customers is centralized and individual purchases and payments noted. Overbuying may thus be prevented, as it is quickly evident through the large number of orders of a single purchaser that may be referred for a checking. Apparent fraudulent efforts of any dealer to load up with a large stock of merchandise prior to a contemplated failure are detected quickly and thus usually prevented.

Credit and collection activities of trade associations are distinctly *service* activities possible only through and dependent solely upon complete co-operation of those members utilizing the services. Therefore, it is advisable and in fact necessary in all such activities to avoid any procedure which may be declared as in restraint of trade, whether actual or implied. Here is specifically a field wherein the co-operative body cannot do some things which the law tolerates when carried on by individuals.

Transportation Activities

Production and distribution, whether agricultural or industrial, invariably depend upon the efficient and economical transportation of raw materials and finished products by rail. Transportation is a very large element in the cost of every article of commerce. Fundamental policies and methods of railroad operation have a vital relationship with the progress or retrogression of commerce and industry in specific localities or throughout the Nation. The transportation situation from any angle is never static, and industry and trade have invariably been sadly inadequate to cope collectively with their everchanging individual transportation and traffic problems.

Among trade associations, transportation activities originally de-

veloped as, and thus far have consisted primarily of, certain specific service functions on behalf of the individual association members. Prominent among these are the determination of rates and adjustment of rate matters before the Interstate Commerce Commission. Paralleling these are the adjustment and fixing of freight classifications, and other actions regarding the many miscellaneous rules and regulations of the Commission.

Thus, one of the most valuable services that the association traffic department renders is to provide the medium by which a single opinion, instead of a multitude of opinions, may be presented to carriers and regulating bodies.

Some associations regularly audit the transportation bills of their members, thereby saving vast sums through consequent deductions of overcharges. There is no instance where trade associations can work to better advantage than in obtaining an adequate car supply in helping to bring about efficient shipping methods. With an ever-recurring car shortage on our railroads, trade associations are assisting not only their members but also the public and the carriers by providing wherever possible, maximum freight loads.

Insurance

A very, very few trade associations have investigated and proceeded at some length into the possibility of carrying on insurance activities on behalf of their memberships. In fact, it is generally considered that insurance *per se* is distinctly a specialized industrial or commercial service function not within the realm of trade association activity. However, the trade association may prove a real force in assisting its membership to a better understanding of insurance as an institution and also to a better knowledge of insurance contracts. It can help the individual member to become a more intelligent buyer of insurance and induce him to take an interest in the various types of legislation which affect insurance and the attendant costs of doing business.

In order that this may be done properly, policyholders—trade association members—must understand more thoroughly the service which insurance as an institution is rendering to them, as well as the terms and service possible from their contracts. Equally important is the reduction of the tremendous *avoidable* losses due to accidents, to fires, and to working conditions in industry and commerce where they affect the health of workmen. Certain trade associations are developing services which will aid the accomplishment of reduction and elimination of waste in industry and commerce from these angles.

Statistical Activities

Perhaps no trade association activity has been subject to such searching investigation and consequent censure as that categorical activity or group of activities, "Statistics." This has not been because statistics of themselves may be harmful or illegal, but rather because of the questionable uses to which they may be put in particular circumstances. Due to the broad ramifications of statistical activity, court decisions defining legal limitations have been numerous; and for the same reason the legal status of many associations is still more or less open to question.

Briefly, statistics may be classified as follows:

1. Production. 2. Stocks. 3. Shipments. 4. Orders. 5. Cancellations. 6. Prices. 7. Employment conditions.

Of course under each of these classifications there are numerous subdivisions of current data.

No one will deny the statement that an industry or trade can operate more efficiently with a complete or nearly complete statistical picture, past and present, of its own branch of business or business in general, than without such a picture. It is true, too, that the efficient operation of business is in the general public interest as well as in the interest of business itself. So, it is established that statistics in business are not only fundamentally essential but fundamentally in the public interest.

But, as already hinted, the difficulty lies in the use to which such statistics are put when once compiled. In the correspondence between Secretary of Commerce Hoover and Attorney General Daugherty, the latter's reply to questions regarding the legality of statistical activities of associations presents the point of view of the Department of Justice though it does not satisfy the need for closer definition.

Trade Associations have gone a long way in the collection, compilation, and dissemination of the essential current statistics of their own industries. Trade association statistics are literally the *only* current economic data in many industries. Such fall within the classifications already given with particular emphasis on production, stocks, orders, shipments, and prices. A continuation of these trade association statistical services is dependent upon new interpretations of the law rendered by the courts or upon new legislation regarding restraints of trade. The fact is that the present-day legal status of such statistical activities is so uncertain that many associations have greatly retrenched their former statistical programs, and some have wholly abandoned the field much to the economic loss of the industry and the public in general. Shortly after the Hardwood Decision was announced by the Supreme Court in December 1921, there followed an extensive abandonment by many associations, not only of those statistical practices condemned by the Court but also of others not so condemned. It is true that the correspondence between Secretary Hoover and Attorney General Daugherty just quoted did much to clarify the issue, but subsequent court decisions, possibly excepting the "Linseed Case," have done much to unsettle the situation. This is explained by the fact that such decisions are based upon special circumstances which may or may not apply in cases of statistics compiled by other associations.

The Twilight Zone of Statistical Activities

The anti-trust laws recognize free competition and forbid restraint of trade. As already hinted, the difficulties of the trade association in connection with the law are twofold; first of all, in its inability to obtain governmental counsel as to how its current or proposed activities may be interpreted in respect to the antitrust laws; and secondly, because of the necessity for it to proceed boldly with an activity or practice—whether of questionable legality or not—with no assurance that it will not be haled into court as a law breaker, provided the former is suspected.

By this it is not meant to imply that the trade association has not by the building up of a background of law through many related decisions any course whatsoever to follow. For it has—and those activities which have been condemned in the past now seem obviously illegal. What we have just been discussing refers rather to what might be termed the "twilight zone" of statistical activity.

In short, the trade association because of the special application and individuality of its statistical activities—governed by the uses to which such activities may be put, i.e., in implied, although not intended, or actual restraints—must be a doer first of all regardless of the suspected illegality of its deeds, before knowing whether or not it may transgress the law. Thus, courses of statistical action are, to say the least, precarious and almost impossible at times.

In order to overcome these difficulties and uncertainties, the Department of Commerce has been working out a plan whereby it might co-operate with trade associations in the distribution of essential statistics which, through fear of subsequent interpretations of the law or other uncertainties, might not be compiled or published. Such a plan has been worked out by the Hardwood Manufacturers' Institute and approved by the Department.

Competitive Illegal Activities

Competitive illegal activities may be hypothetically divided into voluntary and involuntary restraints of trade. Either may find a place within any of the broad activities classifications already enumerated and the four trade association fields of relations discussed later. It may be well to remember that such illegal practices have not been peculiar to trade associations but in reality have applied

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more often to trusts, corporations, individual firms, and partnerships. In fact, probably the latter rather than trade associations have been usually the offenders at law.

Voluntary co-operative restraints of trade in the elimination or control of competition are mutually agreed upon or imposed. It may be well to enumerate briefly various forms of voluntary restraint which have been condemned as illegal.

A. Control of competition through:
   1—Trusts, holding companies, mergers, interlocking directorates.
   2—Arbitrary division of sales territory.
   3—Classification of trade.
   4—Allotment of customers.
   5—Curtailment of production or supply.
   6—Acquisition of competitive patents, copyrights.
B. Restriction on price competition:
   1—Agreements fixing prices.
   2—Agreements affecting prices:
      a—Fictitious bids or sales.
      b—False statements regarding stocks, costs.
      c—Pools and corners.
      d—Common selling or buying agencies.
      e—Refraining from bidding.
C. Restraints on competition in:
   1—Terms.
   2—Services
   3—Activities.

Involuntary restraints on competition are perhaps more vicious than voluntary restraints in that they are directly leveled at competitors. Such co-operative illegal activities include:

A. Control of channels of distribution.
B. Boycotts and blacklists.
C. Cutting off or interference with materials supply.
D. Interference with labor supply.
E. Interference in procurement of storage or other service facilities.
F. Price discriminations.
G. Maintenance of "fighting" instruments.
H. Espionage
I. Intimidation and coercion.
J. Malicious litigation.
K. Misuse of governmental agencies.

With this conglomeration of strictly illegal activities to avoid, the trade association certainly finds its course of legal activity rather clearly defined.

There still remains the "twilight zone" of questioned activities already mentioned, which new court decisions and remedial legislation will tend to define more strictly. The trade association in reality is not fettered with too many legal restrictions, but rather is handicapped for the lack of sufficiently clear delineation between that which in the eyes of the law is in restraint of trade and that which is not; and that which is by implication unfair competition and that which is not.

Mead Pulp & Paper Co. Improvements

CHILLICOTHE, Ohio, January 21, 1924.—The Mead Pulp and Paper Company will start operating Sundays to fill excess orders.

The concern plans enlargement of the plant here in the spring, when it will install a new 146-inch calendar, one of the largest used in the paper-making industry. This will make 12 in the company's battery, and one of these machines will handle about 60,000 pounds of paper daily, officials report. A new paper finishing room and a modern cafeteria restaurant for employes are among the planned additions to the paper mill.

Every seller and buyer of paper should have a copy of Lockwood's Directory of the Paper Trade.

Continental Paper & Bag Mills to Reorganize

Announcement is made that the financing of the Continental Paper and Bag Mills, Inc., which is controlled by the International Paper Company, involves the organization of a new company to be known as the Continental Paper and Bag Mills Corporation of Delaware. This will acquire the property and business of the Continental Paper and Bag Mills and the Rumford, Me., pulp and paper mills of the International Paper Company.

The Rumford, Me., plant is especially equipped for the manufacture of the grades of paper used by the Continental company. The acquisition of the Rumford plant will mean a capacity of 400 tons which will soon be increased to a daily capacity of 500 tons of paper products. There will be no change in the present personnel of the Continental company.

The authorized stock capitalization of the new company will be $5,000,000 prior preference cumulative 7 per cent preferred stock, of which $4,000,000 will be outstanding; $5,000,000 6 per cent cumulative preferred stock of which $2,500,000 will be outstanding and $7,500,000 common stock, of which $3,750,000 will be outstanding. International Paper will own all the prior preference stock, 70 per cent of the 6 per cent preferred stock and 51 per cent of the common.

A new 20-year mortgage will be created, the first and refunding mortgage, with $12,000,000 authorized, of which $6,000,000 will be issued. Balance will be held for future expansion purposes and refunding the $1,843,500 first mortgage 7½ per cent bonds of 1936 of the Marinette and Menominee Paper Company.

Under the new mortgage $6,000,000 Series A 6½ per cent bonds have been sold to a banking syndicate headed by the Bankers Trust Company which will offer them at 95, to yield 6.98 per cent.

Connecticut Valley Cost Men Meet

The January meeting of the Connecticut Valley Branch Cost Association of the Paper Industry, was held at the Hotel Nonotuck, Holyoke, Mass., Tuesday evening, January 15. The meeting opened with a dinner, following which the Chairman, Joseph T. Daly of the American Writing Paper Company, introduced the speaker of the evening, Fred S. Smith, President of Smith Insurance Service, Inc., of Boston.

Mr. Smith read a very interesting and instructive paper regarding "Savings on Insurance Costs." He gave several recommendations whereby the paper mills represented might reduce their insurance costs.

Following Mr. Smith's address, S. L. Bush, of Crocker, McElwain Company, and E. L. Twine of the National Blank Book Company, made a few remarks as to their experience with Mr. Smith's Company and his service compared with others.

The general discussion following brought out many questions for Mr. Smith to answer.

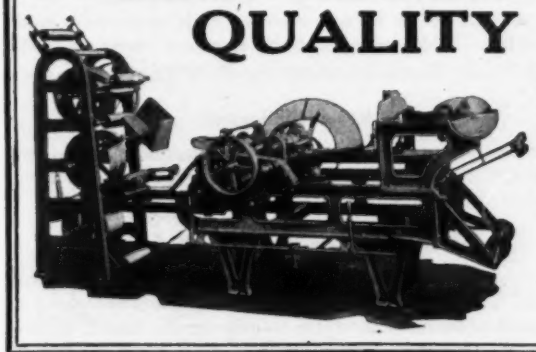
Steam Costs

At the last meeting held by the Wisconsin Division of the Cost Association of the Paper Industry, at Green Bay, Wis., a Committee was appointed by President Shemanski of that Division, to work up some form suitable for pulp and paper mills to report their "Steam Power Costs" to the Cost Association.

This Committee will examine all forms received and suggestions made, in connection with these forms, at a meeting which will be held at the Bellis Hotel, Wausau, Wis., on Friday, February 1st.

For the past year the Cost Association has been working in an endeavor to collect reliable statistics on "Steam Power Costs," which enter so largely into the cost of making pulp and paper.

It is hoped that as a result of this meeting of the committee, a form will be drawn up which will be acceptable to all pulp and paper mills.



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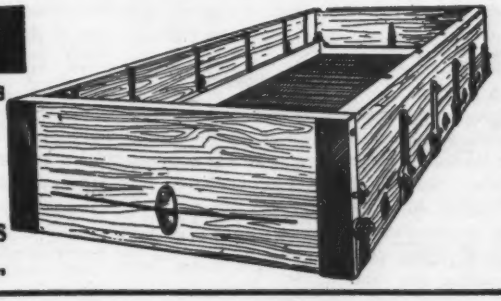

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JANUARY 30, 1924.

The paper market remained practically the same during the week so far as prices are concerned but the demand was rather disappointing. It is not holding up quite as well as dealers and manufacturers had every reason to believe when buying set in good volume during the opening weeks of the new year. Some of the commodities still remain on good call while others are showing distinct symptoms of slacking down.

Just what the reason for this curious situation is no one appears to know. Apparently the consumer is using as much paper as ever and reports from larger publications of the country indicate that he is going to use more as time goes on. Advertising agencies launched a great many direct mailing campaigns and this of course means a good demand for writing and fine papers.

Newspapers and magazines are all increasing their space and circulation. This bodes good for manufacturers of news print and book papers both in the cheaper and better grades. While this general prosperity at the consumers' end has not communicated itself to the manufacturers it is almost certain that it must do so before many more weeks pass.

News print still is leading the market. There is much speculation however on just what the ultimate effect of the local situation may be in that Frank Munsey has wiped out a considerable tonnage by the merger of the Evening Mail and the Evening Telegram.

News print dealers are viewing with alarm this tendency of a very wealthy man to limit the newspaper field. In a recent advertisement he remarked that he was perfectly able to take on a couple more daily publications should he so desire.

Rumors have been circulating to the effect that he had something definite in mind when he made this statement and that he is to make another purchase. Whether this is true or not the fact remains that within the past few months he has taken two big purchasers of news print out of the market forever. Just how long other men of means are going to permit him to continue his collection of newspapers unopposed is a question but it would seem that they would not let it go on indefinitely.

The coarse papers together with tissue are still little behind the other commodities on the market. To be sure the Scandinavian ports being closed by the winter has precluded the entrance of any further quantities from that quarter. There is still enough Swedish paper and pulp in the warehouses of the importers however to make strong competition with the domestic mills.

Board is still about the same with few changes worthy of note. It has fluctuated a little from time to time during the week but dealers and manufacturers say that they believe that prospects are bright, taking a long view of the market.

Mechanical Pulp

Groundwood is falling off a trifle so far as price is concerned but the demand still keeps up fairly well. The grinding mills are running pretty close to capacity with the news print manufacturers taking up the production. While the quotations are not quite as steady as they should be most of the reductions are in special cases where for some reason or other the dealer wishes to get a quick turnover.

Chemical Pulp

Many of the grades of chemical pulp are still weak. Prices of sulphite still show a tendency to fluctuation and buying on the open market is rather slow with many lots available at slight reductions. Some of the cheaper grades of pulp are firmer in price and buyers, since they are sure that no further reductions are in sight, are showing a steadier tendency. There is still a good deal of cheap foreign pulp knocking around and this is not doing much to stabilize the local market.

Rags

Rags are still off on the lower grades while prices seem to be rather weak. Dealers believe that this is only a temporary condition and that things are due to improve very shortly.

Old Rope and Bagging

While old rope is not in quite the good demand it was a few weeks ago it is still holding up fairly well. Bagging is still going along about the same with no real changes in either direction.

Waste Paper

The activity in the waste paper market has died down a little during the last week. There have been some slight price reductions but none of such radical nature as to influence the market greatly. Many of the consumers seem to consider waste paper in some of the grades a better buy than pulp and consequently this market is rather better on the whole than some of the others.

PAPER BIDS OPENED

(*Continued from page* 30)

No. 148—60,000 lbs., Box Board, lined one side, rolled, flat, non-warping, of even thickness, approximately .06 in., and free from lumps, irregularities, and defects; size, 24½x34—35 sheets to the bundle of 50 lbs.

Robert Gair Company, 6 months, 3.09c.
R. P. Andrews Paper Company, 6 months, 3.15c.; 1 year, 3.15c.
Old Dominion Paper Company, 3,599c., for 6 months.

No. 149a—600,000 lbs., Binders Board, No. 2 quality, rolled, flat, non-warping, of even thickness, and free from lumps, irregularities, and defects. Boards must be springy and corners should not break readily when bent sharply. Nos. 16 to 40, 25x30 ins.

Dobler & Mudge, 6 months, 3.8c.; 1 year, 3.8c.
Whitaker Paper Company, 6 months, 3.67c.

No. 149b—Less than car lots.

Whitaker Paper Company, 6 months, 3.935c.

No. 150a—40,000 lbs., Binders Board No. 1 quality, medium hard-rolled, flat, non-warping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Nos. 12 to 30, 25x30 ins.

Dobler & Mudge, 6 months, 3.95c.; 1 year, 3.95c.
Whitaker, Paper Company, 6 months, 3.82c.

No. 150b—Less than car lots.

Whitaker Paper Company, 6 months, 4.085c.

No. 151a—130,000 lbs., Binders Board, best quality, hard-rolled, flat, non-warping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Nos. 18 to 45, 19x30 ins. Nos. 16 to 90, 22x26 ins.

Dobler & Mudge, 6 months, 4.25c.; 1 year, 4.25c.
Whitaker Paper Company, 6 months, 5.02c., No. 90, 4.02c. all other numbers.

No. 151b—Less than car lots.

Whitaker Paper Company, 6 months, 5.285c., No. 90, 4.285c. all other numbers.

No. 152—20,000 lbs., Trunk Board, medium hard-rolled, flat, non-warping, of even thickness and free from lumps, irregularities, and defects. Boards must be decidedly springy and corners should not break readily when bent sharply. Size 34x44 ins., Nos. 6 to 10.

Dobler & Mudge, 6 months, 4.0c.; 1 year, 4.0c.
The Whitaker Paper Company, 6 months, 4,035c.

*All bids for Sidney L. Willson are as Receiver for American Writing Paper.

Market Quotations

Paper Stock Securities

New York Stock Exchange closing quotations January 31, 1924

	BID	ASKED
American Writing Paper Company, pref.	3¼	3½
International Paper Company, com.	38	38¾
International Paper Company, pref. stamped	64	65
Union Bag & Paper Corporation	59½	60

Paper

F. o. b. Mill	
Ledgers	11.00 @38.00
Bonds	9.00 @45.00
Writings—	
Extra Superfine	14.00 @30.00
Superfine	14.00 @30.00
Tub Sized	10.00 @15.00
Engine Sized	8.00 @11.00
News—f. o. b. Mill—	
Rolls, contract	3.75 @ 4.00
Rolls, transit	4.00 @ 4.25
Sheets	4.25 @ 4.50
Side runs	3.50 @ 4.15
Book, Cased—f. o. b. Mill—	
S. & S. C.	7.25 @ 9.00
M. F.	7.00 @ 8.75
Coated and Enamel	9.00 @14.00
Lithograph	9.00 @14.00
Tissues—f. o. b. Mill—	
White No. 1	.80 @ .90
White No. 2	.85 @ .95
Colored	1.15 @ 2.00
Anti-Tarnish	1.50 @ 2.00
Kraft	.95 @ 1.15
Manila	.78 @ .83
Kraft—f. o. b. Mill—	
No. 1 Domestic	6.00 @ 6.25
No. 2 Domestic	5.25 @ 5.75
Imported	4.65 @ 5.20
Manila—	
No. 1 Jute	8.50 @ 9.00
No. 2 Jute	7.75 @ 8.50
No. 1 Wood	4.75 @ 5.25
No. 2 Wood	4.00 @ 4.50
Butchers	4.25 @ 4.75
Fibre Papers—	
No. 1 Fibre	5.50 @ 5.75
No. 2 Fibre	5.00 @ 5.25
Common Bogus	3.50 @ —
S. Screening	3.25 @ 3.75
Card Middles	4.00 @ 5.00
Boards—per ton—	
News	55.00 @60.00
Straw	61.00 @63.00
Chip	50.00 @55.00
Binders' Boards	70.00 @75.00
Sgl. Mla. Ll. Chip	65.00 @75.00
Wood Pulp	70.00 @75.00
Container	70.00 @80.00
Sulphate Screenings—	
Coarse	.80 @ .90
Refined	1.75 @ 2.00
Ground Wood—	
Screenings	20.00 @25.00
Glassine—	
Bleached, basis 25 lbs.	12.00 @15.00
Bleached, basis 20 lbs.	14.00 @17.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	32.00 @35.00

(F. o. b. Mill)

No. 1 Domestic	32.00 @35.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—	
Bleached	4.00 @ 4.15
Easy Bleaching	3.00 @ 3.15
No. 1 strong unbleached	3.15 @ 3.20
No. 2 Strong unbleached	2.60 @ 2.70
No. 1 Kraft	3.00 @ 3.20
Sulphate—	
Bleached	3.90 @ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—	
Bleached	4.00 @ 4.25
Easy Bleaching Sulphite	3.00 @ 3.15
News Sulphite	2.65 @ 3.00
Mitscherlich	3.00 @ 3.10
Kraft (Domestic)	2.75 @ 3.00
Soda Bleached	4.10 @ 4.25

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—	
New White, No. 1	12.40 @12.90
New White, No. 2	5.90 @ 6.40
Silesias, No. 1	6.90 @ 7.40
New Unbleached	10.40 @10.90
Washables	4.90 @ 5.40
Fancy	5.65 @ 6.15
Blue Overall	7.15 @ 8.15
New Blue	4.90 @ 5.45
New Black Soft	4.65 @ 5.15
New Light Seconds	2.75 @ 3.00
O. D. Khaki Cuttings	4.15 @ 4.04
Men's Corduroy	3.65 @ 4.00
New Canvas	6.40 @ 7.00
New Black Mixed	2.50 @ 2.75
White, No. 1—	
Repacked	5.65 @ 6.15
Miscellaneous	4.90 @ 5.15
White, No. 2—	
Repacked	3.90 @ 4.15
Miscellaneous	3.50 @ 3.65
St. Soiled, White	2.80 @ 3.00
Thirds and Blues—	
Repacked	2.65 @ 2.90
Miscellaneous	2.35 @ 2.45
Black Stockings	2.65 @ 3.00
Roofing Rags—	
Cloth Strippings	1.35 @ 1.60
No. 1	1.35 @ 1.60
No. 2	1.25 @ 1.35
No. 3	.85 @ .95
No. 4	.85 @ .95
No. 5A	1.00 @ 1.10

Foreign Rags

New Light Silesias	5.25 @ 5.75
Light Flannelettes	8.00 @ —
Unbl'chd Cottons	7.50 @ 8.50
New White Cuttings	10.00 @11.00
New Light Oxfords	6.00 @ 7.25
New Light Prints	4.50 @ 6.00
New Mixed Cuttings	2.00 @ 2.50
New Dark Cuttings	1.80 @ 2.20
No. 1 White Linens	9.00 nominal
No. 2 White Linens	6.50 nominal
No. 3 White Linens	5.00 nominal
No. 4 White Linens	3.50 nominal
Old Extra Light Prints	2.50 nominal
Ord. Light Prints	2.25 nominal
Med. Light Prints	2.00 nominal
Dutch Blue Cotton	2.50 nominal
German Blue Cottons	2.00 nominal
Ger. Blue Linens	3.00 @ 3.25
Checks and Blues	1.25 @ 1.50
Dark Cottons	1.25 @ 1.40
Shoppery	1.00 @ 1.05
French Blues	2.25 nominal

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—	
Foreign	1.20 @ 1.30
Domestic	1.20 @ 1.30
Wool, Tares, light	1.30 @ 1.40
Wool, Tares, heavy	1.30 @ 1.40
Bright Bagging	1.10 @ 1.20
Sound Bagging	.90 @ 1.00
Manila Rope—	
Foreign	6.25 @ 6.50
Domestic	6.50 @ 6.75
New Bu. Cut	2.15 @ 2.25
Hessian Jute Threads—	
Foreign	2.00 @ 2.25
Domestic	2.00 @ 2.10

Twines

Cotton—(F. o. b. Mill)—	
No. 1	.30 @ .38
No. 2	.29 @ .31
No. 3	.34 @ .36
India, No. 6 basis—	
Light	.17 @ .18
Dark	.16 @ .17
B. C., 18 basis	.41 @ .42
A. B. Italian, 18 Basis	.51 @ .61
Finished Jute—	
Dark, 18 basis	.29 @ .30
Light, 18 basis	.26 @ .27
Jute Wrapping, 3-6 Ply—	
No. 1	.20 @ .23
No. 2	.18 @ .20
Tube Rope—	
4-ply and larger	.15 @ .17
Fine Tube Yarn—	
5-ply and larger	.19 @ .21
4-ply	.20 @ .22
3-ply	.20 @ .22
Unfinished India—	
Basis	.16 @ .17
Paper Makers' Twine Balls	.09 @ .11
Box Twine, 2-3 ply	.14 @ .15
Jute Rope	.15 @ .16
Amer. Hemp, 6	.30 @ .32
Sisal Hay Rope—	
No. 1 Basis	.14 @ .16
No. 2 Basis	.10 @ .12
Sisal Lath Yarn—	
No. 1	.14 @ .15
No. 2	.11 @ .13
Manila Rope	.18 @ .19

Old Waste Papers

(F. o. b. New York)

Shavings—	
Hard, White, No. 1	4.00 @ 4.10
Hard, White, No. 2	3.15 @ 3.25
Soft, White, No. 1	3.10 @ 3.30
Flat Stock—	
Stitches	1.60 @ 1.80
Over Issue Mag.	1.60 @ 1.80
Solid Flat Book	1.50 @ 1.75
Crumbled No. 1	1.25 @ 1.35
Solid Book Ledger	2.15 @ 2.25
Ledger Stock	1.90 @ 2.05
New B. B. Chips	.65 @ .80
Manilas—	
New Env. Cut	2.45 @ 2.55
New Cut No. 1	1.75 @ 2.00
Extra No. 1 old	1.30 @ 1.40
Print	1.00 @ 1.10
Container Board	.90 @ 1.00
Bogus Wrapper	.80 @ .90
Old Krafts Machine compressed bales	2.00 @ 2.10
News—	
No. 1 White News	1.70 @ 2.00
Strictly Overissue	1.00 @ 1.10
Strictly Folded	.85 @ .95
No. 1 Mixed Paper	.55 @ .70
Common Paper	.45 @ .55

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill	
All Rag Bond	35 @ 40
No. 1 Rag Bond	20 @ 25
No. 2 Rag Bond	14 @ 25
Water Marked Sulphite	9 @ 12
Sulphite Bond	7½ @ 10¾
Sulphite Ledger	9½ @ 12
Superfine Writing	18 @ 24
No. 1 Fine Writing	14 @ 18
No. 2 Fine Writing	12 @ 14
No. 3 Fine Writing	9 @ 12
No. 1 M. F. Book	5¾ @ 7½
No. 1 S. & S. C. Book	6¼ @ 7¾
Coated Book	8 @ 10
Coated Label	8 @ 10
News—Rolls, mill	3¾ @ 4½
News—Sheets, mill	4¼ @ 4¾
No. 1 Manila	4½ @ 6
No. 1 Fibre	4¾ @ 5¾
No. 22 Manila	4¼ @ 4½
Butchers' Manila	4¼ @ 4½
No. 1 Kraft	5½ @ 6¼
No. 2 Kraft	5¼ @ 6
Wood Tag Boards	4½ @ 6
Screenings	2¾ @ 3
Boards, per ton—	
Plain Chip	$40.00 @42.50
Solid news	45.00 @50.00
Manila Liner Chip	57.00 @60.00
Container Lined—	
85 Test	60.00 @65.00
100 Test	65.00 @70.00

Old Papers

F. o. b. Chicago

Shavings—	
No. 1 Hard White	3.70 @ 3.80
No. 1 Soft Shav.	2.90 @ 3.00
No. 1 Mixed	1.30 @ 1.40
No. 2 Mixed	1.20 @ 1.30
White Envel. Cuttings	3.70 @ 3.80
Ledgers and Writings	1.80 @ —
Solid Books	1.70 @ —
No. 1 Books, Light	1.45 @ —
Blanks	2.25 @ 2.30
Ex. No. 1 Manila	2.30 @ 2.40
Manila Envelope Cuttings	2.50 @ 2.60
No. 1 Manilas	1.35 @ 1.45
Folded News (over issue)	1.00 @ —
Old Newspaper	.95 @ —
Mixed Papers	.85 @ .90
Straw Clippings	.85 @ .90
Binders' Clippings	.85 @ .90
Kraft	2.25 @ 2.35
New Kraft Cuts	2.45 @ 2.55
Roofing Stock, f. o. b. Chicago, Net Cash—	
No. 1	40.00 @ —
No. 2	38.00 @ —
No. 3	36.00 @ —
No. 4	36.00 @ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10 @ .60
Ledgers	.15 @ .40
Writings—	
Superfine	.15 @ .20
Extra fine	.12 @ .22
Fine	.20 @ .30
Fine, No. 2	.20 @ .25
Fine, No. 3	.15 @ .20
Book, M. F.	.06 @ .11
Book, S. S. & C.	.08 @ .15
Book, Coated	.08 @ .15
Coated Lithograph	.10 @ .15
Label	.08 @ .15
News	.05 @ .07
No. 1 Jute Manila	.12 @ .13
Manila Sul., No. 1	.08 @ .10
Manila No. 2	.07½ @ .08
No. 2 Kraft	— @ .10
No. 1 Kraft	— @ .11
Common Bogus	.02½ @ .03
Straw Board	75.00 @85.00
News Board	65.00 @70.00
Chip Board	62.50 @67.00
Wood Pulp Board (Carload Lots)	1.25 @ 1.50
Binder Boards—	
Per ton	75.00 @80.00
Carload lots	75.00 @80.00
Tarred Felts—	
Regular	48.00 @50.00
Slaters	54.00 @56.00
Best Tarred, 1-ply (per roll)	1.35 @ 1.50
Best Tarred, 2-ply (per roll)	1.00 @ 1.15
Best Tarred, 3-ply	1.50 @ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—	
Foreign	1.25 @ —
Domestic	1.20 @ 1.25
Manila Rope	5.00 @ 6.00
Sisal Rope	.75 @ .80
Mixed Rope	.75 @ .80
Scrap Burlaps	1.00 @ 1.25
Wool Tares, heavy	2.50 @ 2.75
Mixed Strings	.75 @ .80
No. 1, New Lt. Burlap	1.75 @ 2.00
New Burlap Cuttings	1.75 @ 2.10

Old Papers

F. o. b. Phila.

Shavings—	
No. 1, Hard White	4.25 @ 4.40
No. 2, Hard White	3.50 @ 3.75
No. 1 Soft White	3.25 @ 3.50
No. 2 Soft White	2.15 @ 2.25

(Continued on page 70)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 26, 1924

SUMMARY

News print.....682 pgs., 3,028 rolls
Printing paper.....35 cs., 75 rolls, 302 pgs.
Hangings.....29 bls., 5 cs.
Wall paper.....63 bls., 335 rolls, 1 cs.
Cigarette paper.....6 cs.
Tissue paper.....21 cs.
Filter paper.....61 bls.
Packing paper.....54 bls., 17 pgs.
Wrapping paper.....156 cs., 1,132 bls., 977 rolls
Kraft paper.....999 rolls
Straw paper.....46 rolls
Marble paper.....8 cs.
Miscellaneous paper.....107 cs., 464 rolls

CIGARETTE PAPER

P. J. Schweitzer, Chicago, Havre, 5 cs.
P. J. Schweitzer, Aquitania, Liverpool, 1 cs.

WALL PAPER

F. J. Emmerich, Aquitania, Liverpool, 36 bls.
Meadows, Wye & Co., by same, 1 cs.
The Prager Co., Pittsburgh, Hamburg, 335 rolls.
F. J. Emmerich, Megantic, Liverpool, 27 bls.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Megantic, Liverpool, 29 bls.
A. C. Dodman, Jr., Inc., by same, 5 cs.

TISSUE PAPER

Meadows, Wye & Co., Megantic, Liverpool, 2 cs.
F. C. Strype, Samaria, Liverpool, 19 cs.

PRINTING PAPER

B. F. Drakenfeld & Co., Samaria, Liverpool, 20 cs.
Perkins, Goodwin & Co., Seydlitz, Bremen, 46 rolls.
Maurice O'Meara Co., Pittsburgh, Hamburg, 15 cs.
Hudson Trading Co., by same, 29 rolls.
Hudson Trading Co., by same, 54 pgs.
Maurice O'Meara Co., Rockaway Park, Kotka, 149 pgs.
C. B. Hewitt & Bros., by same, 99 pgs.

NEWS PRINT

C. B. Hewitt & Bros., Rockaway Park, Kotka, 100 pgs.
Louis Schulman & Co., by same, 376 pgs.
New Haven Times, by same, 206 pgs.
Parsons & Whittemore, by same, 1,014 rolls.
Parsons & Whittemore, Rockaway Park, Helsingfors, 166 rolls.
Irving Bank, Columbia Trust Co., Rockaway Park, Kotka, 828 rolls.
Irving Bank, Columbia Trust Co., Florida, Copenhagen, 480 rolls.
International Acceptance Bank, Pittsburgh, Hamburg, 502 rolls.
W. V. Bowater & Sons, by same, 38 rolls.

KRAFT PAPER

W. Hartmann Co., Pittsburgh, Hamburg, 999 rolls.

PACKING PAPER

Hudson Trading Co., Pittsburgh, Hamburg, 17 pgs.
J. P. Heffernan Paper Co., by same, 54 bls.

WRAPPING PAPER

Roberts, Cushman & Co., Colombo, Genoa, 2 cs.
Wilkinson Bros. & Co., Inc., McKeesport, Rotterdam, 977 rolls.
Wilkinson Bros. & Co., Inc., by same, 1,132 bls.
Wilkinson Bros. & Co., by same, 154 cs.

STRAW PAPER

A. Vuyck, Veendam, Rotterdam, 46 rolls.

FILTER PAPER

J. Manheimer, Pittsburgh, Bordeaux, 61 bls.

MARBLE PAPER

E. Daiber, Caucasier, Antwerp, 8 cs.

PAPER

Japan Paper Co., Colombo, Genoa, 15 cs.
Schencker & Co., Veendam, Rotterdam, 20 cs.
Steiner Paper Corp., by same, 36 cs.
Import Paper Co., by same, 6 cs.
Keuffel & Esser, by same, 2 cs.
Gluckman & Strauch, Chicago, Havre, 7 cs.
Melby, Kutroff & Co., Inc., Hellig Olav, Copenhagen, 190 rolls.
American Exchange National Bank, by same, 188 rolls.
F. O. Nelson & Co., Inc., Pittsburgh, Hamburg, 78 rolls.
F. & R. Trading Corp., by same, 8 rolls.
S. Langdorf & Co., by same, 21 cs.

RAGS, BAGGING, ETC.

Albion Trading Co., Megantic, Liverpool, 28 bls. rags.
E. J. Keller Co., Inc., Florida, Copenhagen, 457 bls. rags.
E. J. Keller Co., Inc., by same, 100 bls. baggings.
E. J. Keller Co., Inc., Veendam, Rotterdam, 215 bls. rags.
Atlas Waste Mfg. Co., by same, 43 bls. rags.
W. Hughes & Co., by same, 52 bls. cotton waste.
Irving Bank, Columbus Trust Co., Caucasier, Antwerp, 434 bls. flax waste.
L. H. Abenheimer, by same, 149 bls. rags.
Brown Bros. & Co., Liberty, Havre, 83 bls. rags.
Irving Bank, Columbia Trust Co., by same, 107 bls. rags.
E. J. Keller Co., Inc., Liberty, Dunkirk, 46 bls. flax waste.
E. J. Keller Co., Inc., Innoko, Antwerp, 46 bls. baggings.
Salomon Bros. & Co., by same, 17 bls. thread waste.
Salomon Bros. & Co., Laconia, Liverpool, 10 bls. thread waste.
Salomon Bros. & Co., Tarantia, Glasgow, 10 bls. thread waste.
Salomon Bros. & Co., Elsazier, Antwerp, 102 bls. rags.

OLD ROPE

E. J. Keller Co., Inc., Veendam, Rotterdam, 56 coils.
Brown Bros. & Co., Rotterdam, Rotterdam, 342 coils.
Brown Bros. & Co., McKeesport, Rotterdam, 62 coils.

WOOD PULP

J. Andersen & Co., Hellig Olav, Copenhagen, 4,650 bls. dry sulphite pulp.
New York Trust Co., by same, 125 bls. dry sulphite pulp.
Johaneson, Wales & Sparre, Inc., by same, 500 bls. sulphite pulp.
Nilsen, Lyon & Co., Inc., America, Bremen, 300 bls. sulphite pulp, 50 tons.
Lagerloef Trading Co., Rockaway Park, Kotka, 155 bls. strong sulphite cellulose, 25 tons.
Bulkley, Dunton & Co., Seydlitz, Bremen, 1,510 bls. wood pulp.
H. Hallesen, by same, 2,348 bls. wood pulp.
Lagerloef Trading Co., President Harding, 508 bls. wood pulp.
Lagerloef Trading Co., Stuttgart, 788 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 26, 1924.

A. Brown & Sons, Liberty, Havre, 245 bls. rags.
E. J. Keller Co., Inc., W. Cherow, Rotterdam, 492 bls. wood pulp.
M. Gottesman & Co., Inc., Trondhjemsfjord, Sikea, 2,400 bls. wood pulp.

NORFOLK, VA., IMPORTS

WEEK ENDING JANUARY 26, 1924.

C. K. MacAlpine & Co., Odenwald, Hamburg, 2,168 rolls wrapping paper.

NEWPORT NEWS IMPORTS

WEEK ENDING JANUARY 26, 1924.

Johaneson, Wales & Sparre, Inc., Braheholm, Sundsvall, 9,600 bls. ground wood, 2,500 bls. sulphite pulp.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 26, 1924

Parsons & Whittemore, Rockaway Park, Helsingfors, 77 rolls news print.
Paper House of Pennsylvania, Rockaway Park, Kotka, 1,438 rolls news print.
Paper House of Pennsylvania, by same, 440 bls. printing paper.
Lagerloef Trading Co., by same, 1,525 bls. mechanical pulp, 305 tons.
American Wood Pulp Corpo., Innoko, Antwerp, 28 bls. rags.
E. J. Keller Co., Inc., by same, 76 bls. rags.
E. J. Keller Co., Inc., by same, 96 bls. bagging.
Salomon Bros. & Co., by same, 35 bls. cotton waste.
D. J. Murphy, by same, 159 bls. rags.
Katzenstein & Keene, Inc., Pytheas, Marseilles, 90 bls. rags.
Katzenstein & Keene, Inc., M. Mariner, Manchester, 17 bls. new cuttings.
E. J. Keller Co., Inc., Odenwald, Hamburg, 150 bls. rag pulp.
E. J. Keller Co., Inc., by same, 780 bls. rags.
E. J. Keller Co., Inc., Odenwald, Stockholm, 392 bls. rags.
E. J. Keller Co., Inc., Collamer, Bordeaux, 20 bls. rags.
Salomon Bros. & Co., Anaconda, Antwerp, 32 bls. thread waste.

BOSTON IMPORTS

WEEK ENDING JANUARY 26, 1924

J. A. & W. Bird & Co., Athol, Melbourne, 1,000 bags casein.
Lagerloef Trading Co., Rockaway Park, Kotka, 975 bls. mechanical pulp, 195 tons.
Lagerloef Trading Co., by same, 762 bls. dry soda pulp, 152 tons.
Lagerloef Trading Co., by same, 915 bls. bleached sulphite, 152 tons.
Lagerloef Trading Co., by same, 3,327 bls. strong sulphite, 557 tons.
Nilsen, Lyon & Co., Inc., by same, 500 bls. bleached sulphate, 100 tons.
Lagerloef Trading Co., Rockaway Park, Helsingfors, 508 bls. strong sulphite, 76 tons.
Katzenstein & Keene, Inc., Nitoman, Liverpool, 105 bls. new cuttings.
E. J. Keller Co., Inc., Odenwald, Hamburg, 104 bls. rags.

New York Office
280 Broadway

Dayton Office

Chicago Office
10 So. La Salle St.

Compare it
Tear it
Test it
and you will specify it

HOWARD BOND

WATERMARKED

"The Nation's Business Paper"

Made by

THE HOWARD PAPER CO. URBANA, OHIO

Howard Laid Bond
Howard Ledger
Howard Bond
Envelopes

Clay

300 tons daily

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Over forty years' experience in the clay industry has naturally resulted in the adoption of the most scientific methods and practices.

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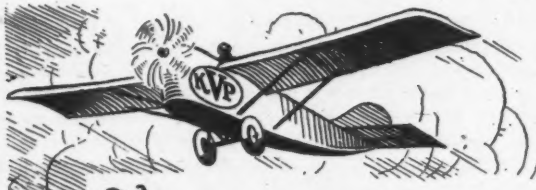

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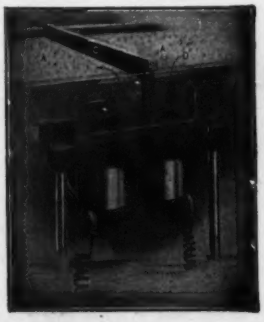

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for PAPER MAKING

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JANUARY 30, 1924.
[BY OUR REGULAR CORRESPONDENT]

Most of the articles on the chemical and accessory markets have remained unchanged during the past week so far as demand is concerned. They are moving through the open market with regularity, but not so fast as dealers might wish. On the other hand there is more call for them than there was a month or two ago and there is every reason to believe that the demand will continue its gradual increase.

So far as those who watch the industry most carefully are able to ascertain, the consumption of paper is considerable with no sign of any diminution. The result must inevitably be that everything touching on the paper market will be in good shape for several months.

BLEACHING POWDER.—Bleach has remained practically unchanged during the past several days. With the demand still in fair condition and prices the same. Quotations have shown a tendency to great firmness and it is now at 1.50 to 1.65 cents a pound.

CAUSTIC SODA.—The call for caustic soda continues to be about the same as it has been since the beginning of the new year. There is no sign of any falling off but on the other hand dealers report that it has not increased to quite the extent that they had hoped it would by this time. The price remains firm at 3.10 cents a pound on a flat basis at the works.

CASEIN.—While casein continues to lag behind some of the stronger chemicals, the demand for it is still at about the same level and it has recovered considerably from its precarious condition of a few weeks ago. The price is a trifle lower on the high range being at from 13 to 15 cents a pound.

CHINA CLAY.—China Clay is still in fair demand in both the imported and domestic grades. While the amount that is coming in from Europe has not increased there seems to be buying enough to take up all that this country offers. In the domestic grades there is also good business and dealers say that the price is from $12 to $15 a ton for the domestic grades and $16 to $20 a ton for the imported grades.

CHLORINE.—Chlorine has not continued its upward rise of a few weeks ago but it is very firm at its present level with a slow but steady demand taking up most of the production. Paper manufacturers however, seem to be showing more interest in it and many inquiries are coming in to the dealers and manufacturers. The price is 3.50 to 4.50 cents a pound in tanks.

ROSIN.—In the home grades the call for naval stores has improved and the price has gone up gradually. The paper industry seems to be taking more than it did a week ago and dealers in rosin report that the price is firm at from $5.90 to $6.00 in 280 pound barrels.

SALTCAKE.—Saltcake on the other hand is moving rather slowly. This does not cause as much distress as it might if it were not impossible for manufacturers to store this product indefinitely without much loss of value. They are storing it now waiting for the market to get in better shape and consequently little is finding its way in the open trading. With this check on the supply the price is quite firm at from $20 to $23 a ton.

SODA ASH.—Soda ash is selling fairly well like the other chemicals to which it is closely related. There has been no change in the price and trading on the open market while a little slower still continues in fairly good volume. The price remains at 1.38 cents a pound on a flat basis.

SULPHATE OF ALUMINA.—Alumina is not quite as brisk as it was at the opening of the year but at the same time the demand is not so slow as to produce any real slump. Paper manufacturers are showing interest even though they may not buy in great quantities. The price is a trifle lower being at 1.30 to 1.40 cents a pound on the commercial grade and 2.10 to 2.25 on iron free.

Market Quotations

(Continued from page 67)

No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.25	@	2.50
Writing Paper	2.00	@	2.25
No. 1 Books, heavy	2.00	@	2.25
No. 2 Books, light	1.40	@	1.50
No. 1 New Manila	2.75	@	3.00
No. 1 Old Manila	1.75	@	2.00
Container Manila	1.25	@	1.50
Old Kraft	2.25	@	2.50
Overissue News	1.25	@	1.35
Old Newspaper	.90	@	1.00
No. 1 Mixed Paper	1.00	@	1.10
Common Paper	.80	@	.90
Straw Board, Chip	1.00	@	1.10
Binders Bd., Chip	1.00	@	1.10
Domestic Rags—New. Price to Mill, f. o. b. Phila.			
Shirt Cuttings—			
New White, No. 1	.12	@	.12¼
New White, No. 2	.07	@	—
Silesias, No. 1	.07¼	@	.07½
New Unbleached	.10	@	.11
Washables	.04½	@	—
Fancy	.05¼	@	.05½
Cottons—according to grades—			
Blue Overall	.05½	@	.05¾
New Blue	.02¼	@	.02½
New Black Soft	.05¾	@	.06½
New Light Seconds	.02¾	@	.02¾
Khaki Cuttings	.11	@	.04½
Corduroy	.03½	@	.04
New Canvas	.08¼	@	.08¾
New Black Mixed	.04	@	—
Old White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous	.04½	@	.04¾
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.03	@	.03¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	2.15	@	2.35
Black Stockings	2.75	@	3.00
Roofing Stock—			
No. 1	1.35	@	1.40
No. 2	1.25	@	1.30
No. 3	.75	@	.90
No. 4	1.15	@	1.20
No. 5A	1.10	@	—
B			nominal
C			nominal

BOSTON

Paper

Bonds	.09	@	.63
Ledgers	.09	@	.55
Writings	.08½	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C.	.07¼	@	.12
Books, M. F.	.07¼	@	.09½
Books, coated	.09	@	.15
Label	.09	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila	6.00	@	7.00
No. 1 Fiber	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping	.07	@	—
Common Bogus	3.50	@	3.85

Boards

(Per Ton Destination)

Chip	$45.00	@	47.50
News, Vat Lined	50.00	@	—
Wood, Vat Lined	55.00	@	57.50
Filled News Board	$50.00	@	52.50
Solid News Board, No. 4 Finish	70.00	@	—
S. Manila Chip	65.00	@	70.00
Pat. Coated	85.00	@	95.00

Old Papers

Mixed Paper	.65	@	.67½
Folded News	.87½	@	.90
Soft White Shavings	2.75	@	3.10
Hard White Shavings	3.75	@	4.00
Kraft Paper	1.95	@	2.10
Ledger and Letter	2.15	@	2.35
No. 1 books and magazines	1.70	@	1.90
Manila Paper No. 1	1.75	@	1.80
Solid Ledgers	2.50	@	2.75
No. 1 Roofing Rags	1.85	@	1.90
No. 2 Roofing	1.65	@	1.75
No. 3 Gunny Bagging	.80	@	.90
No. 4 Brussels and Hard Back Carpets	1.35	@	1.45
No. 5 Roofing Rags			
A's	1.40	@	1.50
B's	1.15	@	1.20
C's	1.00	@	—
No. 6 City Dump Rags	—	@	—
Manila Rope, Domestic	.06	@	.06½
Mixed Strings	1.05	@	1.15
Jute Strings	1.30	@	1.40

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark Tinted	.13½	@	.15
Ledgers (sulphite)	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)	3.75	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	$38.00	@	40.00
Sulphite easy bleaching	55.00	@	60.00
Sulphite news grade	50.00	@	55.00
Sulphite, bleached	80.00	@	—
Sulphate	70.00	@	75.00

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.65	@	3.80
Soft White Book shavings	3.20	@	3.30
White Blk. News	2.15	@	2.20
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.60	@	—
Light and Crumpled Book Stock	1.45	@	—
Ledgers and Writings	2.00	@	—
Solid Ledgers	2.00	@	—
Manilas—			
New Manila Cut	—	@	2.15
Printed Manilas	1.55	@	
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	—	@	.75
Domestic Rags—			
Price to mills, f. o. b. Toronto			**Per lb**
No. 1 White shirt cuttings	.12¾	@	.13
No. 2 White shirt cuttings	.06	@	.06½
Fancy shirt cuttings	.06	@	.06½
No. 1 Old Whites	.04½	@	—
Third and blues	.02½	@	.02¾
			Per cwt.
Black stockings	.03	@	—
Roofing stock:			
No. 1	—	@	—
No. 2	—	@	—
Manila rope	.05¼	@	.06½
No. 2	1.35	@	—
Gunny Bagging	.01¾	@	—